Vol. LXIII. No. 235. SPRING, 1949

The Bristol Medico-Chirurgical Journal

PUBLISHED UNDER THE AUSPICES OF

THE BRISTOL MEDICO-CHIRURGICAL SOCIETY

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The Bristol Medico-Chirurgical Journal

" Scire est nescire, nisi id me
Scire alius sciret."

SPRING, 1946.

NATURE AND SCIENCE

The Presidential Address, delivered on Wednesday, 17th October, 1945, at the opening of the Sixty-seventh Session of the Bristol Medico-Chirurgical Society.

BY

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PREJUDICIAL thinking is a vice common to all of us. It is our unconscious prejudices which are harmful, and damage our reputations as clear thinkers. Fixed ideas are usually based on upbringing and education rather than logic. A scientific education is particularly liable to produce an illusory feeling of self-confidence. We should remember that the sciences are departmental, and deal only with abstractions from total experience. It behoves the scientist, therefore, to be modest and tolerant when expressing views on matters outside the realm of his own special field of knowledge. I am reminded of Oliver Cromwell's saying: " My brethren, by the bowels of Christ I beseech you, bethink you that you may be mistaken."

This, then, is the underlying theme of the present address, which is simply an attempt on the part of an amateur and intruder into philosophy to examine and criticize some of the shortcomings of scientific materialism. The original line of thought probably started up after reading Streeter's " *Reality* ". This paper would not have been written, however, but for the stimulating effect of the writings of that great philosopher A. N. Whitehead, whose penetrating insight has been the main source of inspiration[1]. Unfortunately, much of Whitehead's philosophy is difficult and unsuitable for attempted reproduction in a paper of this kind.

Science is concerned with detailed enquiry into the laws of nature. Even in early times man became aware of broad recurrences in nature; for instance, the sequence of day and night and the broader cycles of the seasons: spring, summer, autumn, and winter. He arrived at an intuitive conviction that there is an order in nature: and, if there is order, there must be laws determining that order. Without this instinctive belief that there is a measure of regularity, a certain smoothness in the nature of things, there can be no knowledge, no useful method, no intelligent purpose, so that any attempt at scientific enquiry would be hopeless.

I want to emphasize at the outset that science is based on faith, an intuitive faith, incapable of proof. Another department of human interest is likewise based on faith, namely religion. It is notorious that scientists and theologians have ever been intolerant the one of the other. If perchance at the present day a scientist manifests patience with religion he is often accused of keeping his critical faculties in watertight compartments and of inconsistency. I am not sure that the charge is just; at any rate, the scientist too is open to criticism. His outlook is liable to be narrow and provincial unless he is likewise a philosopher.

I do not propose to enter into a controversy as between religion and science, but to make a brief survey of the growth of the scientific method and then to examine its limitations. This brief history must necessarily include references to both religion and philosophy, but only in so far as they bear on the growth and progress of scientific thought.

All that has come to the Western world of science, philosophy, and religion emanates from the Middle East: Greece, Palestine, and Egypt—Greece the home of the speculative philosophy, Palestine the birth-place of Judaism and Christianity, and Alexandria the ancient university of an old civilization, noted for mathematicians, engineers, surveyors, craftsmen, and theologians.

Greek philosophy was essentially speculative. Before the days of Aristotle it was untrammelled by any scientific methodology. Let us pick out some examples of early speculative Greek thought. Democritus surmised that the ultimate constitution of the universe is atomic. He coined the familiar word atom. His ideas were developed and systematized later by Epicurus and Lucretius. Theirs was not a bad guess. These three men may be regarded as the forefathers of the materialistic philosophy developed later by the mathematical physicists of the seventeenth century onwards, notably by Newton.

Another famous Greek philosopher was Heraclitus, who was impressed by process and change in nature; but change blended with continuities and endurance. His doctrine is known as the Heraclitan Flux. In him we may detect the germ of an evolutionary philosophy and science. We see that even in these early days, roughly 500 B.C.,

speculative thinkers showed prophetic intuition, which was to reappear 2,400 years later in the baffling problems of modern physics. At the present day men seek to harmonize the discontinuities with flux or endurance in nature in the new science of wave-mechanics.

Of the older Greek philosophers, Pythagoras (500 B.C.) calls for special mention. Mathematics as a pure science owes a great debt to him. He founded the Pythagorean brotherhood. The most famous member of this brotherhood was Plato. These early mathematicians were not concerned with practical applications. They studied the functions of numbers for their own sakes. We owe to them the principles governing complete abstraction and generalization of thought. They gave us the technique of precise measurement and quantitative estimates which is fundamental for science. Aristotle was a great observer, but not a mathematician. Had he been so, he would probably have deserved to be called the founder of the scientific method, for he had a clear logical mind. His system of logic dominated philosophy for centuries. Actually the popularity of Aristotelian logic retarded the advance of physical science throughout the Middle Ages.

Aristotle was vastly interested in zoology. He had his own zoo, presented to him by Alexander the Great. Aristotle's contributions to biology, while illuminating and showing great depth of insight, reached only the stage of classification. They were qualitative rather than quantitative[4]. He was convinced that the infinite variety of life could be arranged in a continuous series, in which each link might be almost indistinguishable from the next. At the bottom of the scale one can scarcely divide living from inanimate matter. Nature makes so gradual a transition from the inanimate to the animate that the boundary lines which separate them are indistinct and doubtful, and perhaps a degree of life exists even in the inorganic. This line of thought comes very near that of the modern philosopher Whitehead, who in his *Philosophy of Organism* regards atoms and molecules as small organisms. Aristotle goes on to say that many species cannot with certainty be called plants or animals. In the midst of a bewildering richness of structure certain things stand out convincingly: that life has grown steadily in complexity; that intelligence has progressed in proportion to complexity of structure; and that with an increasing specialization of function there has been a centralization of physiological control. This seems an intuitive reference to the development of the central nervous system and brain. It seems astonishing that with all these ideas of gradation and similarity Aristotle did not come to a theory of evolution. Actually he rejected the doctrine of Empedocles, that all organs and organisms are a survival of the fittest: and the suggestion of Anaxagoras that man became intelligent by using his hands for manipulation rather than for progression.

The death of Aristotle coincided with the fall of Greece; its

ancient glory departed, and the centre of intellectual life shifted to Alexandria. This event marked the end of a great era of speculative thought. Learning passed into the hands of academic professors, who did valuable work on the technological side, backed up by an intensive study of mathematics. Their major scientific interests were in the fields of geometry, engineering, and astronomy. Names which may occur to you are those of Archimedes the engineer, Euclid the geometrician, and Ptolemy the astronomer.

We have now to consider certain cross-currents. There were religious influences at work, which dominated and restricted thought over a prolonged period lasting some 1,800 years, during which scientific progress came almost to a standstill. Early Greek thought, being essentially speculative, was not controlled by reference to observed facts. As yet no scientific methodology had been evolved. Later, throughout the Middle Ages, a period of excessive rationalism prevailed, influenced largely by the metaphysics of religious dogma. There was no freedom of thought. Traditional beliefs were accepted and any deviation from them was heresy. In 1600 a monk, Giordano Bruno, was burnt at the stake for suggesting that the universe is infinite. Copernicus did not venture to publish his researches on astronomy in his own lifetime. Galileo suffered detention, but died in his bed. His telescope was regarded as dangerous ; he might look up into the sky with it and fail to discover God.

At the beginning of the sixteenth century Europe knew less of science than did Archimedes, who died in 212 B.C. Then suddenly the pace quickened in the sixteenth and seventeenth centuries. There was an outburst of activity, reflected on the side of religion by the Reformation, and on the scientific side by the appearance of men of genius, who were equal to the occasion, and who needed no longer fear persecution on account of their opinions. It is impossible to mention more than a few names. First there was Francis Bacon (1561-1626), who urged the importance of the study of hard and stubborn facts as the basis of scientific progress. He insisted : " Study facts, accumulate particular instances in nature, and general laws will emerge." That is to say, Bacon made the Inductive method of logic the basis of scientific research. We shall have to consider Induction later.

Advances in mathematical technique had survived the stagnant period of the Middle Ages. Men were not persecuted on account of mathematics. The new scientists were essentially mathematical philosophers. It was to be expected, therefore, that the physical sciences should be the first to go ahead. Copernicus (1473-1542) and Galileo (1564-1642) revolutionized astronomy. The names of Galileo and Newton are associated in the famous laws of motion and gravitation, but their lives did not actually overlap. Newton (1642-1727) was born in the year that Galileo died. Newton's further contributions to science were in the field of optics ; his study of the spectrum

and his corpuscular theory of light are famous. Contemporary with Newton was the Dutch physicist Huygens (1629-1693), who enunciated the theory of propagation of light by waves. These two theories seemed diametrically opposed to one another and led to ill-feeling; nowadays modern physicists seek to harmonize the two. Newton simultaneously with Leibnitz (1646-1716), though working independently, created the technique of the differential calculus.

The combined labours of these men constitute perhaps the greatest single intellectual success which mankind has achieved.[2] Their work constructs a vision of the universe, and enables us to calculate the minutest detail of a particular occurence. It is customary nowadays to speak of Newtonian or classical physics; they form the basis of scientific materialism. Newtonian physics held unquestioned sway for the next 200 years or more. They were extraordinarily fruitful in practical results for the progress of the physical sciences. No one questioned their validity up to the end of the nineteenth century. Newton made observations and enunciated laws, but did not pretend to explain them. Clear-sighted men in the eighteenth century accepted the theory of a mechanistically determined universe and the theory seemed justified by results. Materialism has not lacked its philosophers as well as its scientific workers.

It is noteworthy that in the eighteenth century intellectual thought took on a strong anti-religious bias, for which a group of Frenchmen associated with Voltaire (1694-1778) was largely responsible.[5] We have to remember that these men were stirred by a hatred. The failure of the Reformation to capture Catholic France left for Frenchmen no half-way house between infallibility and infidelity. While intellectual England and Germany moved in a leisurely way along the lines of religious evolution, the mind of France leaped from a hot faith, which massacred the Huguenots, to a cold hostility. They envisaged a millennium through the growth of knowledge uncontaminated by any flavour of superstition. La Mettrie (1709-1751), an Army physician, was exiled for his book *Man a Machine*, in which he stated: "All organisms are evolved out of one original germ, through the reciprocal action of organism and environment." He did not attempt to explain the origin of the germ, or what he meant by a reacting organism. Helvetius (1715-1771) evolved an ethic of atheism: "All action is dictated by egoism: virtue is egoism furnished with a spy-glass; conscience is not the voice of God but the fear of the police". Baron d'Holbach (1723-1789) wrote: "Ignorance and fear created the gods. Weakness worships them, and credulity preserves them". Diderot (1713-1784) asserted: "Materialism may be an over-simplification of the world. All matter is probably instinct with life, and it is impossible to reduce the unity of consciousness to matter and motion; but materialism is a good weapon against the Church, and must be used till a better one is found".

These men were the associates of Voltaire, though he was not a frank atheist. Probably he would have called himself a Deist. He hated sham, injustice and hypocrisy, and knew them when he saw them. Deists were the forerunners of the Unitarians. Voltaire also enjoyed an association, intellectual and otherwise, with a remarkable woman, the Marquise du Chatelet (1709-1749). She was a mathematician and physicist, a pupil of the famous French mathematicians Maupertuis (1698-1759) and Clairaut (1713-1769). Her salon became the Mecca of the intellectuals of Europe, and it is easy to see how this group of people influenced the tone of scientific philosophy of their own time and for the future.

A philosopher contemporary with Voltaire was Rousseau (1712-1778), who enjoyed great popularity as a thinker. Stated quite briefly, Rousseau inaugurated a philosophy of the Instinctive, as opposed to rational, foundations of behaviour. His ideas were fashionable in their day: they were the beginnings of a line of thought which found expression later in the writings of Schopenhauer (1788-1860), and later still in the biological philosophers such as Henri Bergson and the modern psychologists.

In 1859 Charles Darwin published his *Origin of Species*. The good bishops thought their old world had crashed. Here was no vague theory of Evolution, but a detailed and richly documented theory of the actual mode and process of evolution by means of natural selection, or the preservation of the favoured species, in the struggle for life. By a blindness which is almost judicial, as being a penalty affixed to hasty, superficial thinking, many religious thinkers opposed the new doctrine, although in truth a thoroughgoing evolutionary philosophy is inconsistent with materialism.

Herbert Spencer rose to the height of his fame as the materialistic philosopher of Darwinism. Spencer offered the world a famous generalized formula of evolution, which made the intellectuals of Europe gasp for breath. I won't read it to you, but it required ten volumes and forty years for its explanation. He tried to show that evolution follows by inevitable necessity from the natural operation of mechanical forces. In the later editions of his *Principles of Biology* Spencer was forced to discuss "The Dynamic Element in Life". He ends:[6] "We are obliged to confess that life in its essence cannot be conceived in physico-chemical terms".

Physico-chemical terms are perhaps the crux of the matter. Apart from mathematics, physics and chemistry are the only tools at the disposal of the scientist. The famous German scientist von Helmholtz (1821-1894) once said: "If we are to comprehend Nature, we must start with the assumption that Nature is comprehensible" —otherwise scientific endeavour would be without hope. Now since physics and chemistry are the only means of enquiry at our disposal, we are bound to assume for purposes of research that nature can be fully comprehended in terms of physical and chemical processes.

You will see this is just one way of expressing some of the difficulties which beset scientific materialism, which Helmholtz faces but does not attempt to solve. The laws of Newton and his followers in the eighteenth and nineteenth centuries were not entirely wrong: they were true within certain limits; but philosophically they were unsound if applied with complete generality. Scientific materialism is pledged to a view of nature which sees phenomena linked together in a cause-effect relationship. The logical outcome of such a view is the doctrine of Determinism. If only you ignore everything that won't come into line, your powers of explanation are unlimited.

The scientific movement responsible for the revolution in physics is associated with famous names: Rutherford with the atom, Minkowski with the concept of Space-Time, Einstein with Relativity. To the Quantum Theory several names are attached, notably Niels Bohr and Heisenberg. Finally Dirac's name is associated with wave-mechanics. Now modern physics, as expressed in the relativity of quantum theories, conjoined with the phenomena of radioactivity, call for a complete revision of our views on space, time, matter, and energy, to mention but a few features of nature. Recent knowledge indicates that the inflexible doctrine of determinism no longer holds good: modern physics deals in probabilities only. The subject has attracted the vigorous attention of scientists, philosophers, and theologians alike. The last-named are particularly interested because the new scientific outlook allows a place for free-will in its purview. On the other hand, modern physics have proved rather devastating to the die-hard materialists. May I quote from Bertrand Russell: "I think the Universe is all spots and jumps, without unity, without continuity, without coherence or orderliness . . . Indeed there is little but prejudice and habit to be said for the view that there is a world at all".

Bertrand Russell's material world appears to be his despair.[7] He goes on to say: "Physicists have recently advanced opinions which should have led them to agree with the foregoing remarks; but they have been so pained by the conclusions to which logic should have led them, that they have been abandoning logic for theology in shoals. Every day some new physicist publishes a pious volume, to conceal from himself and others the fact that in his scientific capacity he has plunged the world into unreason and unreality". Anyone familiar with this field of controversy will recognize that Bertrand Russell is having a dig at Eddington and Jeans in particular.

I have said that Science is founded on an intuitive faith that there is Order in nature, and if Order, then Law.[1] What are we to understand by the Laws of Nature? Do observed constant recurrences in the past entitle us to expect that they will invariably recur in the future? If such be the case, then constant sequences appear to be linked together in a cause-effect relationship which inspires that feeling of confidence which is necessary for scientific research.

We are apt to lose sight of the fact that the so-called Cause is an event in itself, distinct from the effect. The cause-effect linkage is arbitrary. Causation is incapable of proof. In experience we observe sequences and infer causation. Laws of Nature based on this conception are limited to simple description of observed sequences. This is known as the Positivist School of Philosophy, associated particularly with the name of the great Scotch philosopher Hume, and later with that of Auguste Comte, the actual founder of this school.

In practice the scientist ignores the strict Positivist doctrine. He observes constant sequences and then proceeds by inference ; that is to say, he theorizes. The scientist, however, does not allow his inferences to outrun his carefully compiled premises. He realizes and tries to avoid the dangers of inductive logic. Darwin is a good example of a worker who showed meticulous care in this respect. The Positivist doctrine exhibits certain shortcomings. It endows Nature with no dynamic qualities, no urge, no aim. It provides no basis for evolution. The best that can be said for it is that it provides a useful guide for scientific procedure.

What other doctrine of Natural Law can we hold ? We may take the view that the phenomena of nature must conform to, and obey, imposed laws. That is, nature is subject to imposition and direction by a power outside nature itself, such direction being rational and purposive. This is a Deistic conception, and one which readily becomes anthropomorphic. Unhappily it depicts the Deity in an unfavourable light. Nature, red in tooth and claw, seems amoral and relentless. It is difficult to apply to God the attribute of rational omnipotence and at the same time to depict Him as a sort of oriental despot indifferent to human suffering—suffering which presumably he could prevent if he would. I won't pursue this line of thought further. There are other objections to the doctrine of " Law Imposed " which make it repugnant to the scientist. It is a facile way of explaining everything, particularly anything we don't understand. It savours of magic and superstition. It offends the intellectual integrity of the scientifically-minded.

A third doctrine of the Laws of Nature is known as " Law as Immanent ". This theory presupposes an active, dynamic principle, organizing and directive in character, itself partaking in the very being of nature, participating alike in nature's achievements and failures. The doctrine of Law as Immanent provides a basis on which we can build ideas of interaction, forward urge, adaptation and evolution. In one form or another this idea of immanent law is a basic conception in the writings of most of the great biological philosophers—Bergson's phrase *élan vital* will be familiar to many of you. Whitehead's *Philosophy of Organism* and Smuts's *Holism* contain this basic idea of internal urge as necessary for evolution.

This idea of immanent law is open to the charge that it is pantheistic. Is this a valid objection ? The materialist is in a very similar position. Go back to Newton, the parent of scientific materialism. He formulated the laws of motion and gravity, as statements of fact, but did not explain them : when asked the cause of gravity he at once postulated God. The inference is obvious. The scientific materialist is ultimately in no different position from the pantheist. For purposes of research he creates isolated systems, which are abstractions from total reality ; he is on firm ground so long as he appreciates that he is dealing only with abstractions, for the specific purposes of departmental research. But his systems are static and can afford no basis for an evolutionary philosophy. They can't work without a *deus ex machina*.

Before leaving this brief survey of the Laws of Nature, we should do well to recognize our own limitations. Our faculties are finite, limited by our special senses and by linguistic difficulties, which debar us from expressing clearly ideas which may be held intuitively. How can we hope to solve the ultimate problems of nature ? Our interpretations are just common thinking, though still perhaps in process of further development. For us then the laws of nature may be no more than conventional interpretations, the products of human reason.

Our powers of thought, even when our thinking is most critical, are shot through and through with what I may call human rationalism. By human rationalism I mean our judgments are subject to the limitations imposed by our own special senses. As human beings we interpret experience accordingly. Let us take an example :

A problem ever before us is the difficulty in determining at what level intelligence appears in lower forms of life. We recognize purpose low down in the animal scale ; e.g. the social activities of bees, ants, and the like. There is even a suspicion of purpose in the way that the malarial parasite appears to seek shelter from attack by leucocytes within the protective envelope of the red blood corpuscle. We don't admit mind in such a case, nor do we admit intelligence in the insect world. We speak of tropisms or chemiotaxis to cover our ignorance. The truth is that insects possess special senses of an order totally different from our own ; they beggar our powers of understanding or accurate description. Lloyd Morgan tried to make the establishment of conditioned reflexes a test of the threshold of the dawn of intelligence. This seems artificial and unsatisfactory and takes no account of purposive activities at lower levels. The point I wish to make is that we ought to be humble about our own attainments, and recognize that we are in no position to deny powers of discrimination and purpose at levels of organization in the animal world which are necessarily beyond our ken. To think in terms of mind, as we know mind, is to demonstrate our own limitations. We discuss nature under these limitations of

human thought and language, and flatter ourselves that we are discussing the "laws of nature". I repeat then, that what we conceive to be the "laws of nature" may be no more than our conventional interpretations of natural happenings. Our statements about nature are subject to human bias, and cannot in any case be complete or universally true.

One of the major errors of the materialist has been dogmatism. His pronouncements bristle with instances of Dogmatic Fallacy. There is hardly a theory of the nineteenth-century physicists which has not required reinterpretation. Perhaps the solitary theory which has not eventually proved a two-edged weapon for materialism has been the Law of the Conservation of Energy. The theologians have been even worse sinners than the scientists in this matter of Dogmatic Fallacy. They took almost complete charge over the intellectual world for 1,800 years in the Middle Ages and put a complete estop on scientific research; this by reason of dogmatism. Freedom of thought was not only disallowed, it was actively persecuted.

To sum up: the scientist is inclined to flatter himself that above all he is a realist, a man who worships facts. Yet scientific knowledge is essentially abstract, departmental, and tends to become provincial in outlook. The scientific mentality combines enthusiasm in its own sphere with intolerance for types of experience which do not come within its purview. The natural philosopher, on the other hand, takes a synoptic view of nature. He must find a place for all types of experience. He is a stern critic of all assumptions. His quest is one of complete generalization. A hopeless quest, one may say, since it can never achieve finality. Any system of philosophy is bound to fail at some point, but the combined efforts of philosophers have carried us along the pathway towards the goal we are seeking, and in a way that departmental sciences and dogmatic theologies can never hope to do.

There remains the final reflection:[3] how shallow, puny and imperfect are our efforts to sound the depth in the nature of things. In philosophical discussion, the merest hint of dogmatic certainty as to finality of statement is an exhibition of folly.

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THE DIAGNOSIS AND TREATMENT OF RHEUMATOID ARTHRITIS

BY

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An Address to the Bristol Medico-Chirurgical Society on 13th March, 1946.

IN a large percentage of cases, a diagnosis of Rheumatoid Arthritis can be made from the far end of the room; but in some 5 per cent. it may be so difficult that three equally eminent physicians might make three different diagnoses, entailing quite different treatment for the same case. The remaining 95 per cent., in which most would agree to the diagnosis, may be sub-divided into two syndromes, typically distinct but with intermediate forms. Their recognition is important, as both prognosis and treatment differ.

Idiopathic rheumatoid arthritis occurs in the female sex in 70 per cent. of cases and usually in the asthenic type. The onset often follows shock, worry or fatigue. It commences insidiously; wasting of muscles and trophic changes in the skin are very marked and are sometimes the first sign of the condition; the small peripheral joints are first and usually symmetrically involved. There is an early loss in weight: there is usually a microcytic anaemia. The sedimentation rate is always raised and does not undergo rapid fluctuations; the Arneth count of the lobes of the polymorphonuclear cells is often normal; X-rays show a generalized osteoporosis.

The non-specific infective or secondary type of rheumatoid (focal arthritis) occurs equally frequently in either sex and there is no characteristic diathesis. It often occurs within a month, typically in ten to fourteen days, after an infection—sore throat, quinsy, antrum infection, appendix, etc.: or on examination an obvious septic focus such as an apical abscess at the root of a tooth is discoverable. Its onset may be more acute, starting first in one of the larger joints and then spreading to the smaller peripheral ones, but usually less symetrically than in the "idiopathic" type. Only those muscles are wasted which act on the joints involved, and trophic changes are less marked. There may be little or no loss of weight. A microcytic anaemia is usually present; the sedimentation rate is very rapid but may fluctuate considerably within a few weeks; the Arneth count usually shows a shift to the left denoting more immature white cells in the circulation; osteoporosis is mainly confined to those bones in the region of the involved joints. In this syndrome, with eradication of sepsis and sometimes with gold-therapy, the prognosis

is often excellent, whereas in the idiopathic type the removal of septic foci usually has little effect unless they be gross enough to jeopardize the general health of the patient.

Mrs. H., age thirty-four, a somewhat introspective, highly strung woman, had suffered from a quinsy in February, 1944 and again in September. In November, 1944, she had another sore throat, while at the same time she was working very hard as a school-teacher and was much concerned about the "fly-bombs". In December there was pain and swelling in the right shoulder, followed rapidly by involvement of the knees, ankles, wrists and fingers. There was little loss in weight. In April, 1945, the tonsils were removed, and this was followed by a course of myocrisin totalling 1.9 gm. At this time the sedimentation rate was 80 mm. W. By November, 1945, the sedimentation rate had fallen to 7.5 mm. W. and she was quite fit except for slight stiffness and occasional twinges of pain in the wrists.

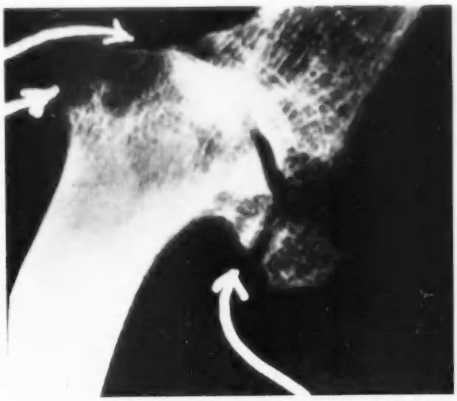
Differential Diagnosis.—There are at least five fairly common conditions, which, though typically quite distinct, may at times simulate the secondary type of rheumatoid arthritis. They are gout, polyarticular osteoarthritis, peri-articular fibrositis, ankylosing spondylitis, and specific infective arthritis.

Typical Gout is easily diagnosed with its family history of the condition in 50 per cent., the sex incidence, the past history of acute attacks followed by complete remissions, and the sthenic build. There is no loss of weight. The blood uric acid is raised in 70 per cent of cases; the sedimentation rate is frequently raised but rapidly varying; anaemia is absent; X-rays of the hands or feet show punched-out areas (the hands should always be X-rayed with a control, even if there is no obvious involvement in this area). Full doses of colchicum provide a therapeutic test: the dose should be sufficient to cause slight diarrhoea before the absence of effect can be considered in establishing a diagnosis. But gout does occur in women and is then particularly liable to be atypical and without acute attacks. Also punched-out areas are seen in X-rays of rheumatoid arthritics, though in these cases the area is usually co-incident with erosion of the over-lying cartilage. (Figs. 1 and 2.)

In Polyarticular Osteoarthritis the joints of the hands are typically nodular instead of fusiform. The skin is often red, instead of blanched and sweating; there is no loss in weight. The sedimentation rate is not as a rule raised and X-rays may show the typical Heberden's nodes arising from the periosteum in the distal phalanges.

Peri-articular Fibrositis frequently occurs around the finger joints of adults who have in the past suffered from rheumatic fever. This raises again the question of the inter-relationship of the rheumatic diseases, a question re-opened recently by the American work on lesions found post-mortem in the hearts of rheumatoid patients. These cases of fibrositis do not, however, as a rule, progress to a

PLATE I.



[*By courtesy of Dr. G. D. Steven*

FIG. 1.

Erosions in gout : note fine cortical layer largely intact.

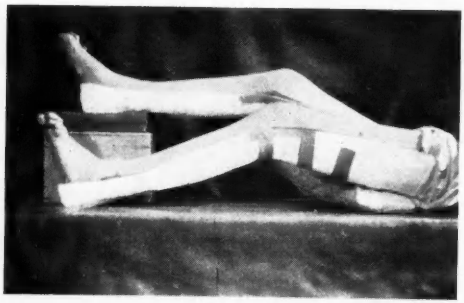
[*By courtesy of Dr. G. D. Steven*

FIG. 2.

Erosions in rheumatoid arthritis : note surface erosion.

PLATE II.

A



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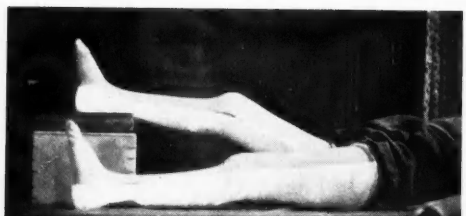

C

FIG. 3.

Treatment of flexion deformity of the knees by means of serial plasters (A, B, and C.).

rheumatoid syndrome, and the sedimentation rates and X-rays are usually normal. Their treatment is extremely unsatisfactory.

Spondylitis Ankylopoietica, occurring in men three times more frequently than in women, and involving mainly the spine and sacro-iliac joints, often commences with symptoms of sciatica. It does sometimes, however, start with pain and swelling in the peripheral joints, and then the loss of weight, raised sedimentation rate and osteoporosis in the X-rays make it for a time indistinguishable from rheumatoid arthritis. In America this type seems to be more common than in this country, and Americans therefore frequently refer to spondylitis ankylopoietica as rheumatoid arthritis of the spine. Ankylosing spondylitis usually reacts poorly to gold-therapy but is frequently helped by X-ray treatment.

Specific Infective Arthritis, of which Gonorrhoeal Arthritis is one of the best examples, is often indistinguishable from the secondary type of rheumatoid arthritis except by isolation of the organism concerned. However, it reacts well to penicillin and frequently also to sulphonamides and hyperthermy, all of which are useless in rheumatoid arthritis. Attacks of iritis, conjunctivitis, fasceitis and tenosynovitis are suggestive of a specific rather than a non-specific origin.

Ætiology. The most widely held view of our conception of the ætiology of rheumatoid arthritis may be summed up in the words of Professor Stanley Davidson[1] as "an abnormal immunological reaction of the host to an infection," and, one might add, perhaps to certain other traumata : physical, dietetic and above all psychological. The factors proven statistically to be significant in connection with the onset of rheumatoid arthritis are infection (probably not one particular infection), fatigue and exposure, worry and shock.

Treatment. This can be considered under the headings of general treatment, elimination of sepsis, physical and orthopaedic treatment, and the use of drugs.

In every active case the patient should at first be put to bed and given as complete physical and mental rest as possible ; he should receive a good nourishing diet with plenty of vitamins and iron and should live under the best hygienic conditions.

In " idiopathic " rheumatoid arthritis only gross sepsis should be eliminated : but in the " focal " type a careful search should be made both by history-taking and examination for sepsis in the teeth, sinuses, tonsils, gall-bladder, appendix, and prostate or cervix. All teeth should be X-rayed, and any that are dead, crowned or unerupted should be looked at particularly critically. No tooth should, however, be removed unless there is definite evidence of infection, and not more than one should be extracted at a time, at all events in the first instance. Where, after careful removal and fixation of the crown in wax, a culture of the same organism can be obtained from a number of points on the root, and where the patient shows a reaction to the

extraction, an autogenous vaccine should be prepared in high dilution, e.g., 100 million organisms to the c.cm. If there is clinical progress for a time, followed by a phase in which the condition becomes stationary, the vaccine should be used. The routine use of vaccine is to be deprecated.

Under the heading of physical and orthopaedic treatment should be considered : (*a*) the balancing of rest and exercise, including the prevention of deformity ; (*b*) re-education of the capillary circulation ; (*c*) counter-irritation ; (*d*) X-ray therapy ; and (*e*) correction of deformity already present. As a general rule, during the acute and sub-acute stages the affected joints should be rested on light splints. These are removed daily for movement once through their full range, for the application of heat, possibly some gentle massage of the effleurage type for the whole limb, and static contraction and perhaps faradic stimulation for the muscles acting on the joint. The movements are best carried out in a warm pool, or failing this in a warm room, in Guthrie-Smith suspension slings.

For re-education of the circulation, contrast heat and cold is employed followed by a good rub-down, the aim being to produce a feeling of " glow " and well-being. The temperatures required to produce this will vary with each patient and, if successful, will increase in range as the treatment progresses. Counter-irritation may be applied in many ways ranging from a simple Scott's dressing or kaolin poultice containing cantharides to the cautery or an erythema dose of ultra-violet light.

The correction of flexion deformity in the knees is best carried out by the application of serial plasters, each being applied with the maximum amount of extension possible and being divided after twenty-four hours so that it can be removed daily for treatment (Fig. 3). Usually after about ten days there has been a gain in extension of some ten degrees and a new plaster is then put on to take up the slack. Correction of deformity in the hands is more difficult, but rest-plasters combined with exercises and occupational therapy will often help, though occasionally finger-traction is indicated. For the shoulders, treatment in sling-suspension with springs is by far the most satisfactory method of increasing abduction and rotation. (Fig. 4.)

Analgesics in full doses are of value both for promoting sleep and improving the appetite by the relief from pain, and it is difficult to beat the time-tried mixture of aspirin or calcium aspirin : aspirin gr. x, phenacetin gr. v, and caffeine gr. i, given three or four times a day if necessary. The sulphonamides and penicillin are useless in true rheumatoid arthritis and any effect from these indicates specific infection. Likewise, hyperthermy is only of value in gonococcal cases. Gold is by far the most valuable form of drug-therapy, but should only be used after a preliminary period of rest and treatment on the general lines indicated above and when the presence of activity

PLATE III.

FIG. 4.

Improvised sling method of treating abduction deformity of the shoulders in rheumatoid arthritis.

is indicated by a raised sedimentation rate. Progressive or severe renal or liver damage and the presence of eczema are contra-indications to its use, and during its administration X-ray treatment and ultra-violet light should be employed with caution, if at all, owing to the sensitizing effect on the skin. Sodium aurothiomalate (myocrisin), and more recently the calcium salt (auro-calcium), are the preparations most used, and the dosage employed is much smaller than was the case some years ago. One c.cm of collosol calcium given by injection at the time seems to reduce the incidence of toxic reactions. The onset of dermatitis, albuminuria or blood in the urine, stomatitis, severe joint reactions with fever, colitis or severe leucopenia (a fall in the white cell count below 4,000, affecting mainly the granulocytes), are indications for stopping the drug. Provided that such mishaps do not occur, an average course of auro-calcium could be planned on the following lines : 0.01 gram, 3 doses ; 0.025 gram, 3 doses ; 0.05 gram, 18 doses—total 1.0 gram.

From the above outline of the treatment of the " rheumatoid syndromes " two facts stand out clearly : that where possible, rheumatoid cases should be sub-divided into " idiopathic " and " focal " types in order to assess the likely significance of infection ; and that, in both types, in the present position of our knowledge, a wide view should be taken of treatment and every aspect receive due consideration in drawing up a plan of campaign.

REFERENCE.

[1] *Glasgow Med. Jour.*, 1943, p. 140.

THE MANAGEMENT OF PEPTIC ULCER

BY

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A paper read at a Meeting of the Bristol Medico-Chirurgical Society on Wednesday, November 14th, 1945.

THE management of peptic ulcer is a big subject to discuss exhaustively, and so I will deal with three aspects of it—firstly, the significance of periodicity ; secondly, the factors producing healing of the ulcer ; and thirdly, the surgical aspect.

Let me begin by reviewing some of the events in the life of a sufferer from this disease. The patient, usually an otherwise healthy person in youth or middle age, gets an attack of discomfort or pain associated with meals. He ascribes it to some recent business worry, cold, or dietetic indiscretion. Discussion with friends introduces him to the use of alkali—which he finds gives him temporary relief—and after the use of several patent brands the pain leaves him and the last brand he used is given the credit. Later on—days, weeks, months or even years after—another attack occurs, and this is followed by fresh attacks. Again the attacks are attributed to some antecedent event, and the patient treats himself with diet and alkalies, or may seek medical advice. Each time he gets a varying degree of relief for which he thanks his diet, his powder or his doctor. So the attacks tend to go on, relapse and remission following each other, each with its facile explanation.

The completeness of the relief is such that there is delay in seeking medical advice, and the patient is averse to having treatment which keeps him from his work during times of comfort. Even if he is forced to his bed by an attack, the completeness of the relief which follows makes him unwilling to remain there long.

Of course we all know that this feature of periodical remission and relapse—periodicity—is typical of gastric and duodenal ulceration. It is also the curse of the disease, for the patient again and again is lulled into a false sense of security by the remissions. For the pain goes before the ulcer is healed, or even while it is active, and the patient returns to his work, or to the practices which caused the ulcer to appear, and this goes on and on till such extensive damage is done to the stomach or duodenum that hope of complete anatomical repair is lost. The periodicity does not necessarily mean alternate

healing and breaking down of the ulcer, for radiological or gastroscopic examination during the remissions often shows the presence of active ulceration. Why then does the ulcer suddenly become symptom-free ? This question is undecided, and rests on the also unknown answer to the question of the cause of ulcer-pain. In this matter I strongly believe that chemical or acid stimulation of the ulcer is the cause of the pain. This belief is strongly supported by Palmer's test. Palmer's test is to introduce into the stomach 100-200 c.cm. of 0.5 per cent. hydrochloric acid solution, i.e. about the same strength as gastric juice : and in a few minutes, if the patient has an ulcer, he will get pain—and this pain can be relieved by removing the acid, or neutralizing it with alkali. This test may be negative during remissions, even if a gastric ulcer is present.

Similarly others have produced pain in duodenal ulcers by the injection of acid into the duodenum. I have, under local anaesthesia, with only the abdominal wall anaesthetized, exposed a gastric ulcer after opening the stomach and put a swab soaked in decinormal hydrochloric acid into the ulcer, and within 1½ minutes produced pain like ulcer-pain. This was relieved by removal of the swab and replacing it by saline.

If acid stimulation be the cause of pain, then the remissions may result from the nerve-endings being protected by a thick tenacious plug of mucus or by new mucosa growing from the edge. Or possibly a little fresh necrosis of the edge or base might cause temporary death of exposed nerve-endings, and pain would cease until the slough had separated to expose live tissue again. Symptoms are known to cease abruptly after a haematemesis : in such cases one may at times find the crater filled with blood-clot, which would act as a barrier.

Against these theories is the fact that stimulation of the crater with acid during a period of remission of symptoms may not produce pain even if the mucus is scraped out. Possibly inflammation sensitizes the nerve endings in the crater to stimulation.

However, sometimes the remission does mean that the ulcer is healed, but the first main fact we must face in estimating the result of our ulcer treatment is that cessation of pain and other symptoms does not by any means prove that the ulcer has been cured or even improved. Of course, continuance of symptoms suggests that the treatment is probably not succeeding. Unfortunately legions of remedies, injections of foreign protein, mucosal extracts, histidine, endocrines, etc., have had an undeservedly long vogue as a result of the failure to take into account the natural remissions of the disease. Many things appear to produce a remission. Perhaps the most certain methods are to take a holiday, or a week-end in bed, or be admitted to hospital. I recollect once taking a French physician round my wards. He remarked that at his hospital all peptic ulcer cases were admitted to hospital and given a course of injections of

protein, and within three days they were free of pain. I was able to shew him that my patients, during this time of bed-shortage, were admitted for a barium meal X-ray the first day, a fractional test meal the second day, and by the time they were due for gastroscopy on the third day their pain was usually gone! This is despite the fact that the examination might shew active lesions.

How then can we judge the efficiency of our treatment if symptoms are too erratic to be of value? What of physical signs? These are notably absent except in the presence of a local peritonitis, abscess, deep penetration, or pyloric stenosis. Hyperalgesia of the skin is variable, in true ulcer cases often absent, and very pronounced in the nervous dyspepsias. High epigastric tenderness is more marked in nervous dyspeptics than in cases of true ulcer, and there may be no tenderness when one palpates over an active ulcer. This is not very surprising, for it is possible, after opening the abdomen under local anaesthesia, to palpate an ulcer of the stomach, to pinch or squeeze it, without causing pain.

No: symptoms and physical signs are both poor guides to show the result of our treatment, and only by radiological or gastroscopic examination can we be certain that we have improved or cured the ulcer.

FACTORS PRODUCING HEALING OF THE ULCER

Now supposing that we have discovered that a certain régime produces healing of the ulcer, we should next try to discover what is the most important factor in the régime. It has been my habit to treat ulcer patients on routine lines in hospital, with a bland diet including frequent feeds of milk, alkalies, atropine and bed-rest. Before the war I used the régime recommended by the late Sir Arthur Hurst. Under this régime I was impressed by the rapidity with which acute and subacute and even some chronic gastric ulcers would heal, or at any rate become much smaller: indeed if there was no change after a fortnight's treatment one was very suspicious of malignancy.

However, in an endeavour to find out the most important factor in treatment, and with gastroscopic control, I tried the effect of abandoning one factor after another in patients with gastric ulcers. First I put them on three big meals a day with nothing between meals, the meals being ordinary hospital full diet. There was no change in the rate of healing! Next I abandoned the use of alkalies and atropine: again the ulcers healed at their usual speed. On the other hand, I have tried allowing the patients to go home, on a strict ulcer diet and alkalies, allowing them to work only half-days, and have found that healing is usually slower and uncertain. Thus it appears that bed-rest is the major factor in the healing of these gastric ulcers. Why is this? Is it some psychological influence, or is it recumbency?

It is fashionable to stress psychological influences, and to suggest that mental rest is the healing factor. We know that relapses are often attributed to business worries and family crises. The effect of air-raids has been cited as evidence of psychological damage affecting peptic ulcers. In Bristol and London medical students have given statistical evidence to show the effect of air-raids on the incidence of perforation of ulcers. You will be interested to see how the fly-bomb raids affected the number of admissions of cases of haematemesis (Fig. 1). In fact, air raids even increased my operative mortality for gastrectomy (Fig. 2).

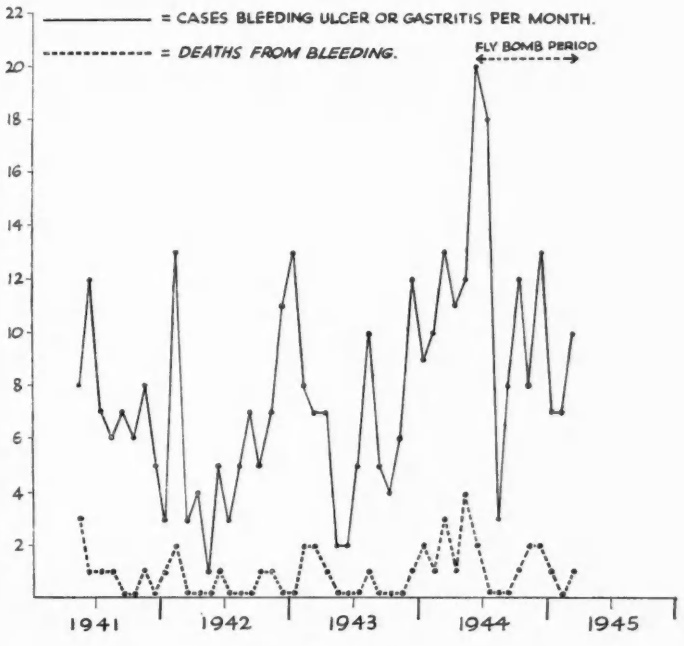

FIG. 1.

Monthly incidences and mortality of gastroduodenal hæmorrhage (excluding carcinoma and hepatic cirrhosis).

However, all these things do not prove a pure nervous stimulus to ulceration. For emotional upsets, business worries, air-raids and shelter-life mean disordered meal-times, missed meals and missed sleep, and these are physical factors which I believe of great importance in the production of ulceration. Furthermore, bed-rest in hospital does not mean freedom from worry, for many are in grave economic difficulties with their illnesses. A patient was admitted

and gastroscopy shewed an ulcer. His employers told him that if he was not fit for work in two weeks he would lose his job. He was agitated, and wanted to leave hospital; on my advice he changed his mind, and a second examination after two weeks (the day

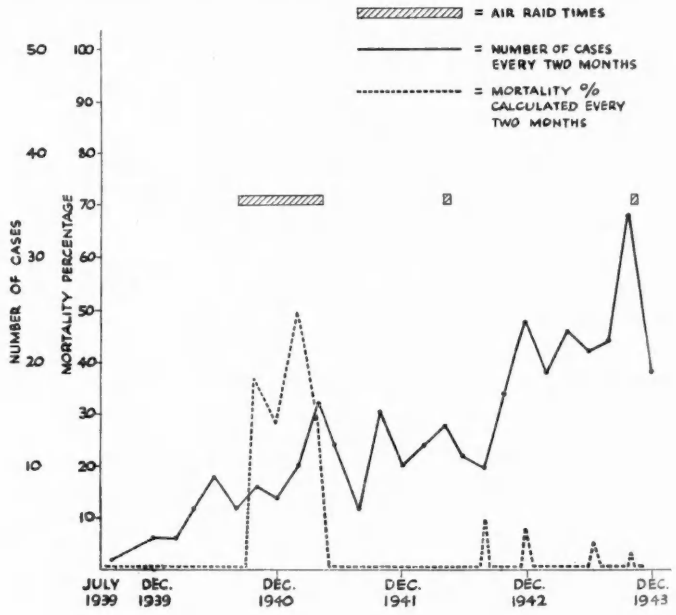

FIG. 2.
Mortality for gastrectomy for innocent ulcer.

before he was to lose his job unless he left hospital) showed perfect healing. However, one must concede that in hospital there is a certain lack of nervous tension which may be present in some occupations, and one must give due weight to psycho-somatic factors.

THE INFLUENCE OF RECUMBENCY

To discover if the position of the body had any effect I treated patients in Fowler, Trendelenberg and flat positions. Of course there was a tendency for all to get into the flat position, for those in the Fowler slipped down at nights. Also it is difficult to compare rates of healing: ulcers are so variable in their rate of healing even under similar circumstances. To make the comparison a little more accurate, I have also added the average age and average length of

history of each group. This was the result, but it must be taken with some reserve :—

GASTRIC ULCERS treated first six months, 1943	108
Number repeatedly examined in hospital to ascertain time required for healing reasonably accurately	49
Flat in Bed. 15 cases.	
Average age	53 years
Average length of history	8.6 years
Average time required for healing	34 days
Fowler position. 23 cases.	
Average age	54 years
Average length of history	7.4 years
Average time required for healing ..	49 days
Trendelenberg position. 11 cases.	
Average age	55 years
Average length of history	10 years
Average time required for healing ..	35 days

The average age in each group is about the same, but the Trendelenberg group had the longest history, and so it would appear that the Trendelenberg favourably influences ulcer-healing, while the Fowler position appears to retard it. My clinical impression was that the Trendelenberg position improved healing, and at least one ulcer in a man of 71, which had failed to heal two years in succession, healed on the third attempt in the Trendelenberg position.

There are several factors connected with recumbency which might influence healing.

1. The diminished gastric activity as a result of the diminished nutritional needs of a resting patient. This is unlikely to be a major factor.

2. Some would liken the ulcer to a varicose one, with venous stasis, but there is no evidence of venous stasis and, to say the least, it is a highly unlikely explanation.

3. Cole claims to show a diminished blood-supply to the lesser curvature in the upright position.

4. Diminished tension on the ulcer edges. Normally after taking a meal the stomach increases in size by the slipping over each other of the muscle-fibres and their active elongation, so that though the stomach may descend to the pelvis there is no increase of tension (Fig. 3). In the neighbourhood of an ulcer this process would be hampered, and there might after a meal be some gravitational pull on the edges of the ulcer tending to draw them apart: or if the ulcer was a penetrating one fixed to a neighbouring organ, then the ulcer itself would become one of the points from which the stomach was suspended, so increasing the distractive tension on the ulcer (Fig. 4).

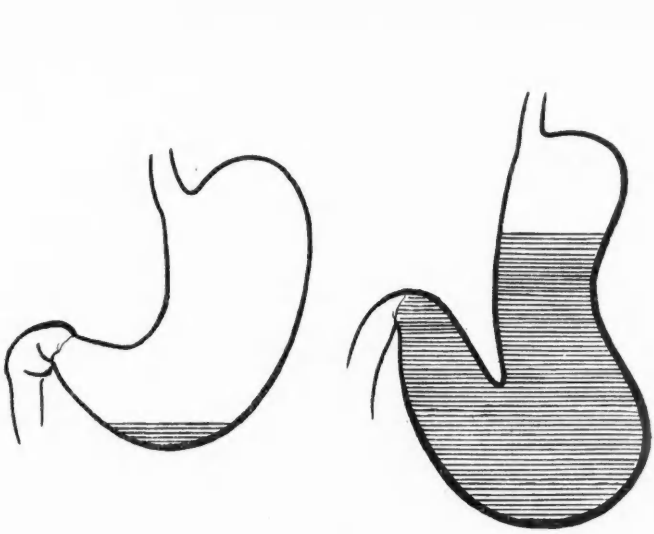

FIG. 3.
Descent of normal stomach during filling.

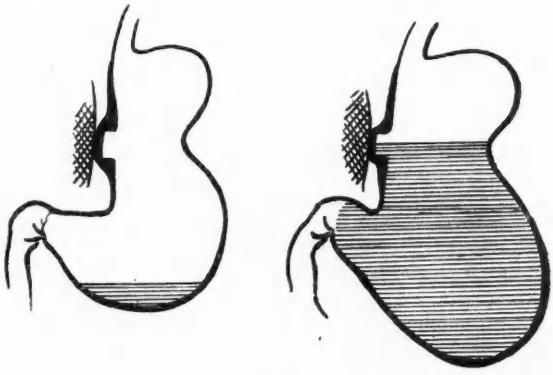

FIG. 4.
Gastric ulcer, with adhesions fixing affected part of stomach: tension on ulcer when stomach fills.

This would be important because the main healing of an ulcer takes place by contraction of its base and approximation of the edges. (Taking small frequent feeds would have a similar result to recumbency in diminishing gravitational effects).

5. The fifth possibility is that recumbency may change the extent of the chemical stimulus to the ulcer. The body and fundus of the stomach secrete acid gastric juice, the pyloric antrum a feebly alkaline digestive juice (Fig. 5). Also, after eating, the lower part

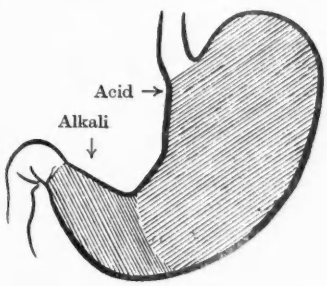

FIG. 5.
Reactions of gastric secretions.

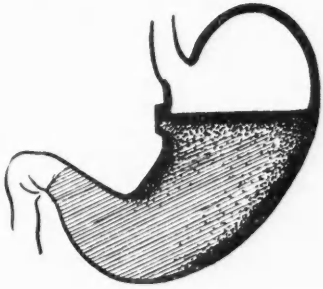

FIG. 6.
Upright posture: strongly acid secretion in contact with ulcer.

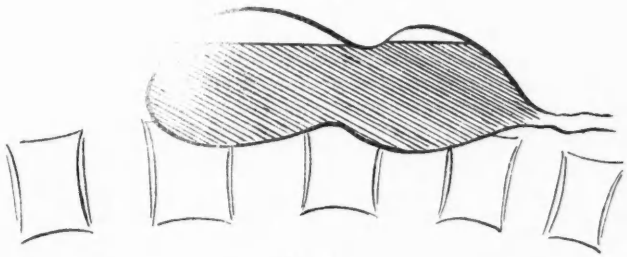

FIG. 7.
Lying down: change in area and position of upper level of fluid.

of the body first fills and then the level gradually rises. The body and fundus act as a reservoir and in the antrum active mixing takes place. In the body there is not much mixing, but according to Cannon a stratification of the food. That is to say the apple pie and custard lie above the roast beef and Yorkshire pudding for some time. Waves of peristalsis in the body may not greatly mix the upper with the lower layers for a time. Now though the whole body is secreting gastric juice, that from the fundus will run down and

tend to produce a level of greater concentration on the upper level of the food, so that at a certain stage of digestion, an ulcer in the lesser curvature will have this strong layer of concentrated juice opposite it for a time, and acid juice will pour over it till the end of digestion (Fig. 6). Now the effect of recumbency is to shift the fluid level (Fig. 7)—if the patient lies on the right a lesser curve ulcer will lie under food till nearly the end of digestion; if he lies on his back most posterior ulcers will be a long time covered by food and also the top level of gastric juice will be wider and so thinner and also will more readily mix with the alkaline pyloric juice and food, so diminishing the acid chemical stimulation to the ulcer. Some of these explanations are rather "far-fetched"; certainly the subject is a difficult one.

After this digression, back to our main point. We must not forget the strong tendency for the less chronic ulcers to heal when the patient is kept in bed, and we must bear this in mind when we are judging the effects of any new method of treatment which entails bed-rest.

EARLY TREATMENT OF ULCER DYSPEPSIA

What then should be the procedure when a patient comes to his general practitioner with an ulcer-like dyspepsia for the first time? If the patient is over thirty-five he should have an X-ray of the stomach and duodenum to exclude carcinoma. If he is youthful he should not be sent away with a diet and some alkali. Such a procedure will satisfy him and probably provoke a remission, but it will also set him on the road to chronicity and the surgeon. He should instead have two to three weeks' rest in bed to cure his ulcer. This is usually enough if it is his first attack: and then he should have his eating habits and his job reviewed, any irregularities or bad habits being corrected before returning him to work. If he fails to get complete relief of pain, then one would suspect extra-gastric or functional dyspepsia or carcinoma, and he should have a radiological examination. If he relapses he should have radiological control of his next course of treatment.

What of alkalies? Though I have abandoned them experimentally, I use them in practice. It is certainly rational to do so, and I believe there is even a place for the prolonged use of the non-absorbable alkalies, e.g. magnesium trisilicate, in the prevention of relapse.

THE PLACE OF SURGERY

What part must surgery play in the management of peptic ulceration? Unfortunately, with our imperfect co-ordination of ulcer treatment, with the great delays which occur before the first satisfactory course is given and the sending of our healed patients

back to the conditions which produced the ulcer originally, and particularly the great tendency of the chronic ulcer to relapse even after healing, the part played by surgery must be a large one, quite apart from its place in the treatment of complications such as perforation, abscess-formation or haematemesis.

As surgeons, I think we discover better than physicians, and better even than morbid anatomists and radiologists, how great is the destruction produced by peptic ulceration. When the chronic deep ulcer heals it does so largely by contraction of the ulcer base and approximation of the ulcer edges—thereby narrowing the length and the circumference of the stomach or duodenum. There is also an ingrowth of new columnar epithelium from the edges, but this is often a feeble growth. With years of recurrent healing or partial healing and relapse, more and more normal mucosa is lost until the

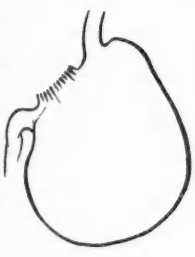

FIG. 8.

Deformity of stomach produced by contraction during healing of ulcer.

FIG. 9.

Stenosis of duodenum due to completely encircling ring of ulceration.

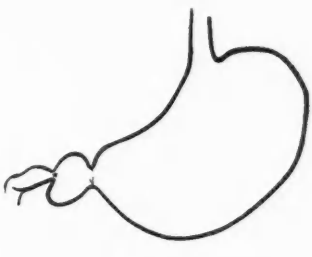

Fig. 10.

Pre-stenotic diverticulum.

deficiency produces serious deformity (Fig. 8). In the early stages only a few radiating folds appear, but later on, especially in the duodenum, a stage arises where any further contraction of the base will produce such stenosis as to be incompatible with life. In addition there are in the cases which come to surgery usually more than one duodenal ulcer, often anterior and posterior, and they may coalesce till there is a complete ring of ulceration (Fig. 9).

In such cases I have twice, during a gastrectomy, found that after division of the adhesion around the duodenum it fell in two, because there was a complete circle of completely penetrating ulcer. In most cases of duodenal ulcer that require surgery such a degree of narrowing has occurred that there is dilatation or ballooning of the duodenal wall between pylorus and ulcer, producing the so-called "pre-stenotic diverticulum," (Fig. 10) in itself of no great importance. But these organic changes show how futile is the sufferer's hope of gaining comfort and security from further medical treatment. He

really needs a graft of new duodenal tissue to replace that which is lost, and that nature will not supply. Again, in the stomach, an ulcer which appears to be only an inch or so in diameter may really represent the loss of the whole posterior or anterior wall or more, but by vigorous contraction of the base it has become small (Fig. 11).

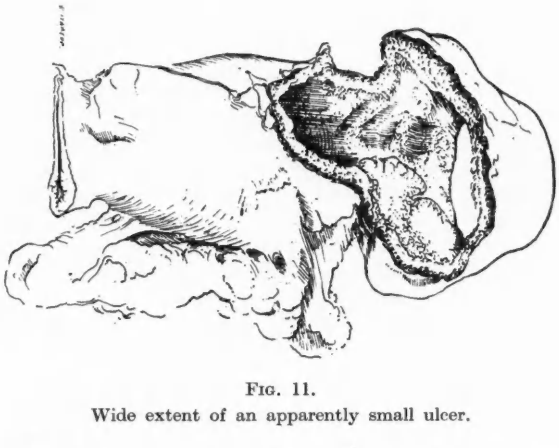

FIG. 11.
Wide extent of an apparently small ulcer.

Apart from the great anatomical destruction, occasionally an ulcer will not heal because of the rigidity of its base, or fixation of its fibrotic edges to the pancreas or liver. In such cases there is probably no disagreement that surgery is the only means of attaining comfort.

However, I will freely admit that I often perform gastrectomy for ulcers that would in time heal medically. In 1938 we gastroscoped a man who had had a severe haematemesis shortly before. He had been in my ward on two previous occasions with a haematemesis due to gastric ulcer, and each time had healed well. The ulcer was seen to be soundly healed. A colleague, however, jestingly remarked: "Now he is fit, the healed ulcer will make an easy and safe operation; we should do a gastrectomy." We did not, of course, and the following winter he came in again and died after his haematemesis. There is no doubt that recurrent ulceration is often an indication for surgery. In fact I would suggest that in the decision whether to operate or not, the patient's history is just as important as the present condition of his ulcer. If he has a large ulcer now and only has a three months' history, medical treatment may provide him with a permanent cure. If he has a small ulcer now and gives a history of having had it treated on and off for ten years, you may heal it again, but healing will not be permanent and he will probably be better off with surgical treatment.

There are other factors to take into account when deciding whether to operate or to continue with medical treatment. Age diminishes the hope of medical cure, economic difficulties make repeated and prolonged medical treatment more difficult, weak-willed patients are often incapable of following a post-ulcer régime.

THE NATURE OF THE SURGICAL PROCEDURE

One may briefly consider the type of surgical procedure. As regards gastric ulcer, I believe there is no real alternative to gastrectomy: if it is very high a Pauchet type of operation, removing a tongue-shaped segment of the lesser curve containing the ulcer, gives excellent results.

Duodenal ulceration provides the chief problem in settling the type of procedure to be followed. While no operation which entails anastomosing stomach to jejunum can be considered free from the risk of recurrent ulceration, there is, I think, no doubt that a high partial gastrectomy is the procedure least likely to be followed by recurrent ulcer and is the best we can do for most patients. However, in later life there is a tendency for the gastric acidity to diminish. Therefore short circuit may be justified in the elderly if the fractional test-meal shows a normal or low acidity or gastroscopy shows a thinning gastric mucosa. Every textbook puts down pyloric stenosis as an indication for gastro-jejunostomy. While a long-standing stenosis may produce a chronic gastritis and lower the gastric acidity, stenosis by no means gives any guarantee of safety. Some of the worst cases of anastomotic ulceration I have seen have followed a short-circuit for stenosed duodenal ulcer, particularly in the young. Gastro-jejunostomy is permissible as a temporary expedient in the poor risk case. A man aged twenty-six was admitted under my care with tetany and severe alkalosis, due to pyloric stenosis, with a blood urea of 216 mgm. The physician considered him unfit for surgery even after prolonged gastric lavage and bed rest. However, I did a short circuit under local anaesthesia and warned the patient to return to me in six months for a second stage. He came back to me eighteen months later in excellent general condition, and his blood urea was normal, but he had a return of discomfort after food for two or three weeks. I operated on him again, and found a very deeply penetrating gastro-jejunal ulcer, for which I performed a high gastrectomy, and he has remained well since. Here the division into two stages made a poor-risk case successful, but as so often happens, he did not appear for the second stage until recurrent symptoms frightened him in.

How we all wish that a gastro-jejunostomy could be made safe from recurrent ulceration. Somerville has recommended a ligation of the gastric vessels at the same time. I have tried this on a few elderly

patients, but 20 per cent. of them developed anastomotic ulceration. I must admit, however, since hearing Somerville, that my ligation of the vessels was not so radical as his. There is something to be said for combining gastro-jejunostomy with left subdiaphragmatic vagotomy, which will diminish gastric secretion for about a year, plus removing a part of the acid-secreting body of the stomach, though I have not practised these operations enough to give any personal results.

There are to my mind two serious defects in the posterior gastro-jejunostomy as it is usually done, in the lowest part of the stomach (Fig. 12). This means that the anastomosis is to the acid-secreting part of the body, and that all the time acid-secreting mucosa is adjacent to jejunal mucosa. In addition, acid juice secreted between

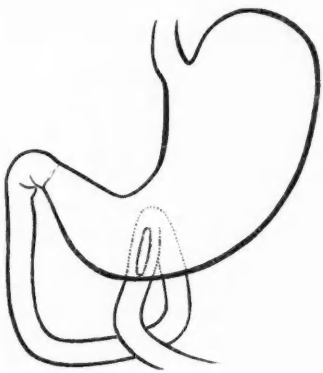

FIG. 12.
Usual (low) posterior gastro-jejunostomy.

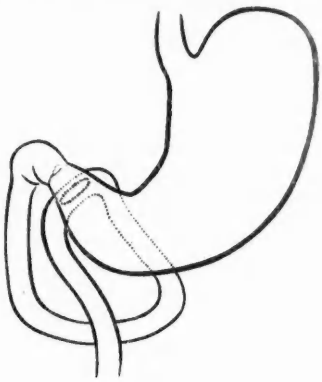

FIG. 13.
Juxta-pyloric posterior gastro-jejunostomy.

meals and at night tends to collect in the lower part of the body and so bathes the stoma.

It seems to me more reasonable to place the anastomosis in the pyloric antrum: at first I made a posterior juxtapyloric anastomosis (Fig. 13). This is technically difficult, and I later made a number of anterior ones in the same situation (Fig. 14). Now the resting juice lies away from the stoma, and the mucosa stitched to the jejunum is alkali-secreting. I complete the operation by covering the anastomosis with the omentum (Fig. 15). The results over two years have been satisfactory, but one must wait a long time before one can recommend such a method to others.

Now from the patient's point of view, his first and chief desire will be that he should survive the operation, and so I believe that surgery should never be undertaken unless the patient has had a

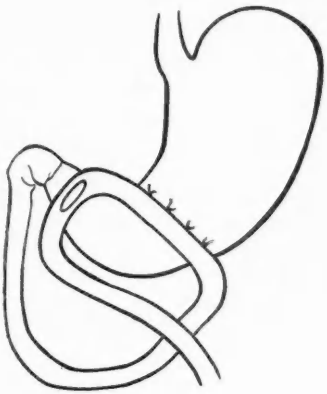

FIG. 14.
Anterior juxta-pyloric gastro-jejunostomy.

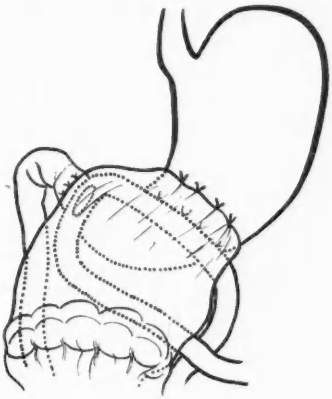

FIG. 15.
Omental graft.

good pre-operative course of bed-rest, full vitamin and high-protein diet, so that he shall be in as good physical condition as possible and his ulcer fairly quiescent. If the patient is too impatient to have this, he had best forego the operation. My graph of the effect of air-raids on mortality shows that other things than surgical skill are involved.

You may be interested in my own figures for gastrectomy for simple ulcer since 1941, excluding operations done purely to arrest haematemesis.

Four years June, 1941—June, 1945. Gastrectomies for simple ulcer (excluding operations purely for the arrest of haemorrhage, .. 393

	No. of gastrectomies	*Died*	*Operative mortality*
Duodenal ulcer ..	160	1	0.6%
Gastric ulcer ..	195	7	3.5%
Gastro-jejunal ulcer	30	0	0%

When abdominal surgeons get together the question often arises : Do you ever get patients with prolonged discomforts after gastrectomy—attacks of vomiting, particularly of bile, nausea, flushes, vertigo, faintness ? Now it is not uncommon to have minor disorders of this sort for up to six months after gastrectomy, though usually the more the operation was required the less prominent they are. However, one of the great snags of ulcer-surgery is that both peptic ulcer and functional nervous dyspepsia are common illnesses, and when they are combined they are liable to get operated on, because they prove to be medical failures and the physician is glad to be rid of them.

Let me cite two of my failures :—

(1) A woman aged forty-nine was admitted with prolonged and recurrent attacks of painless vomiting, and a history of mild dyspepsia. I was asked to see her after a ten days' attack and later explored her as a possible recurrent mild obstruction (she had had a previous pelvic peritonitis). Unfortunately I found she had small quiescent anterior and posterior duodenal ulcers, and I did a gastrectomy. She still gets attacks of vomiting although X-rays and gastroscopy show no further ulceration. My mistake was to operate for duodenal ulcer, when the main symptoms were not those of ulcer at all, but possibly some abnormal functional reverse peristalsis.

(2) A man aged thirty-five, thin, morose and with cold clammy hands, came complaining of continuous epigastric discomfort so marked that he had only worked for three months in the last four years. X-ray showed a duodenal ulcer. I treated him medically twice more, with no alleviation of his distress, and finally operated. He had an anterior and posterior inactive duodenal ulcer. I did a gastrectomy. He is still unhappy, and has similar pains and discomforts as before, though he is working with the aid of intensive psychotherapy. Here my mistake was to operate on a man who was " constitutionally inadequate," or, if you like, a functional dyspepsia was his main trouble and his peptic ulcers were comparatively of minor importance. A non-obstructive ulcer does not prevent a young man from working for three years and nine months out of four years. Such a history, and the lack of periods of freedom from pain should have made me doubt whether the duodenal ulcer was really his basic complaint.

I think these two cases will explain the cause of a large percentage of our failures. In such cases with a duodenal ulcer and functional nervous dyspepsia I have tried pyloroplasty, dividing the vagus nerve, and closing the abdomen without doing anything at all : but they all continue to complain. For surgery will never cure the functional dyspepsias, even if there is a coincident organic lesion. In other words, let surgeons be wary of the patient with multiple and persistent symptoms and the quiescent ulcer.

REFERENCES

1. With reference to the hæmatemesis chart : the highest point on the chart—20 cases per month—was that worked out for June, 1944. The fly bombs started June 16th, and the evacuation of London started then and continued for two months or so.

Deaths from bleeding increased between December, 1943 and May, 1944 (that was another matter) : for that period I had experimentally started operating on all severe cases of hæmatemesis (a note on this matter is in Gordon Taylor's article on hæmatemesis in the last *B.J.S.*). Of course, the invasion of Europe started early in June and that may have played some part in the raise incidence of bleeding.

2. *Graph on influence of recumbency.*—I realize that this table is not very conclusive, but the interest appears to be the definitely longer time taken by cases in the Fowler position (which is the nearest to the ambulant position), compared with the other two. The slightly increased chronicity of the Trendelenberg group shows that at least it is not worse than in those treated flat. My main endeavour was to differentiate between flat and Fowler—and Trendelenberg was added in an attempt to accentuate the difference.

THE BRITISH RED CROSS IN NORTH-WEST EUROPE

BY

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An address delivered at the Annual Meeting of the Bristol Branch of the British Red Cross Society on Tuesday, May 28th, 1946.

ORGANISATION

This is an account of the organisation and work of the British Red Cross in France, Germany and Holland, from the beginning of the invasion of Europe in 1944. The Commission is divided into three main parts:

(*a*) The Military Welfare Unit.
(*b*) The Foreign Relations Section.
(*c*) The Civilian Relief Unit.

MILITARY WELFARE UNIT

The *Military Welfare unit* carries out the traditional work of the Red Cross and Order of St. John in the care and welfare of sick and wounded of the fighting forces during war. In the arrangement for sending food-parcels and other comforts to prisoners of war and the staffing of Convalescent Homes, Relatives' Hostels, etc., this unit works intimately with the army and under the general directions of the Director of Medical Services of the army with which it is functioning.

Hospital Supplies.—The unit had been got together in London during the winter of 1943-44, and was held in readiness, complete with men and equipment, for the coming invasion of the "fortress of Europe." Comforts and hospital necessities, based on experience gained in other theatres of war, had been accumulated and lay packed ready for immediate shipment, together with motor transport and camp equipment. The personnel had been chosen as carefully as conditions allowed in those difficult days. "D" Day came, but not till thirty days later was the spearhead of this Expeditionary Force Unit released to land on the beaches of Normandy. They speedily installed themselves and set about their work of bringing comfort and relief to the wounded. The heart of this unit, as of similar units working on other battlefields, was the "Stores." Under huge canvas tents an amazing assortment of goods had been brought together, ranging from razor-blades to nurses' gowns, and from electric irons and dart-boards to sewing-machines; to say nothing of other trifles such as easy chairs, pyjamas, wireless sets and tea-urns—in fact, anything that was likely to be required to make conditions happier and more

comfortable for patients in their tented wards. The majority of the hospitals had been pitched in fields that lined the Bayeux-Litry road, which soon became known as Harley Street. The aim and object of the unit was to jump in and fill the gap in any emergency. To do this it had to be prepared to meet the unforeseen and to deal with the unpredictable. Hence the need for stocks of such a diverse nature, the selection of which called for a certain amount of imagination. The first demand received was from a blood-transfusion unit for blankets to cover blood-donors. Thereafter a fleet of vans and lorries were speeding along the shell-pitted roads and muddy lanes of Normandy, carrying their loads to every hospital and casualty clearing station of the B.L.A. Back-rests were one of the items supplied in their hundreds for patients suffering from chest wounds. Close on the heels of the spearhead followed the main body, which brought the unit's strength up to a very modest number in view of the work they had to do.

Welfare Officers.—The first batch of Welfare Officers now began to arrive. Posted in pairs to each of the general hospitals, they lived under the same conditions as the sisters, under canvas, sleeping on cots sunk below ground level to protect them from shell-bursts. Conditions were not very pleasant in the waterlogged Normandy orchards in which they lived and had their being, but these girls were invariably full of cheer. It was this quality of cheerfulness under all conditions that was perhaps their outstanding trait, and made them so deservedly popular with patients. It is not always easy to be cheerful in the small hours of the morning when you have been dragged out of bed to serve tea and cigarettes to a newly-arrived convoy of patients waiting on their stretchers in the draughty reception tent to be distributed to their respective wards, but somehow these girls always managed to do it, and, what is more, to carry on as usual next day. The duty of these welfare officers is to render to patients the hundred and one little services for which the busy ward-sisters have not the time—write their letters, bring them books and distribute cigarettes, and supply deficiencies in their kit. As often as not a man is brought off the battlefield with nothing, and he has to be supplied with soap, razor toothbrush and comb, and with something to read and to smoke. He will probably wish to write a letter to his people, and notepaper and pencil are supplied. He may be worried about his wife or children, and a cable will be sent to our London headquarters to make the necessary enquiries. Or he may just be bored, and the gramophone or a game of dominoes no longer appeal, which brings us to :—

Diversional Therapy.—It has long been known that the state of mind of a sick man may help or hinder his cure, and that even a broken leg will heal more quickly where anxiety is absent. But it

is only of late years that this fact has been given the attention it deserves. It is this field of mental healing that the Red Cross has made particularly its own, through the agency of its welfare officers and supplies. In the early part of this war the Red Cross popularized, through the medium of its 250-odd Convalescent Homes that had been established in England, what is technically known as Diversional Therapy, or in simpler language handicrafts: particularly those adapted to the use of bed-patients—tapestry, embroidery, knitting, rug-making, etc., all of which proved very popular amongst men, many of whom displayed amazing aptitude in these feminine arts. Men who had never so much as sewn on a button in their lives made beautiful embroidery. The patient's hands thus employed, he was relieved of boredom and had less time to worry about himself. Many patients displayed excessive ardour and accomplished their work too quickly, having in mind the difficulty of obtaining fresh materials—"Look, Sister! I've finished it!"—proudly displaying a bit of work that should have kept him quiet for a week, completed in a day.

Motor Ambulance Convoys.—The Red Cross has been associated with the use of motor-ambulances for the conveyance of wounded from very early days. The first M.A.C.s in France during the 1914-18 war were given and manned by the Red Cross, and it was right and proper that they should be again represented in the late war. The first Motor Ambulance Convoy arrived in Normandy in August, 1944, manned entirely by women, with the exception of their Commanding officer. They did such excellent work that at the request of the army medical authorities two more convoys were sent out as soon as they could be made ready. These also were manned by women drivers. Thus by the spring of 1945 three Motor Ambulance Convoys were operating with the B.L.A., comprising 111 ambulances and patient-carrying buses, manned by 166 women drivers. During their combined existences these ambulances covered no less than 1,400,000 miles, and carried more than 166,000 patients. The drivers of these convoys gave an outstanding example of women doing men's work. By so doing, they liberated a corresponding number of men drivers for work in areas such as the Far East, for which women drivers were considered unsuitable. The army officers under whose command these convoys operated were never tired of singing the praises of the work done by these girl drivers. They were ready for duty by day or night, rain or shine, winter or summer, with never a complaint. And what is more, the standard at which they maintained their vehicles was unapproached by any other army unit—96 per cent., which was the record of one unit, is very close to perfection.

Then came the great trek of 400 miles from Bayeux to Brussels in September, 1944. New headquarters were established and great

warehouses taken to house our stores. As the enemy retired, branches were thrown out into Holland and Germany to care for advanced hospital units, and thus maintained the Stores slogan of immediate delivery. In wartime, when a hospital needs something, it is usually needed at once, and the Stores Department had always before them the old motto " he gives twice who gives quickly." Eventually the area served extended from Bayeux to Berlin, and from Marseilles to Kiel.

Chiropody.—One of the chief attributes of the Red Cross is its elasticity. This permits it to try out new ideas, many of which have proved their usefulness. A comparatively recent case in point is the Mobile Chiropody Units that were equipped and supplied by the Scottish branch of the Red Cross. The first trial unit, consisting of a well-equipped motor-van and its staff of four trained women, proved such an enormous success that the army asked that two more be provided. The first unit, in the months from December, 1944, to September, 1945, treated over 7,500 patients and travelled over 8,000 miles. The other two units arrived just as the war ended, and their careers were consequently comparatively short, but they were very useful whilst they lasted.

Convalescent Homes.—Five Convalescent Homes were opened by the Red Cross, four in Belgium and one in Berlin, where officers and other ranks, both men and women, were received for an average stay of about ten to fourteen days. A high standard of comfort was achieved and it was the endeavour of their staffs to run them as " homes " in fact as well as in name. How well they succeeded is shown by the remark of one young Guardsman that the " place made him feel homesick." Two of these homes were especially designed for the use of army sisters in need of recuperation and rest from their exacting labours. It was but right that they who were entrusted with the care of our wounded should themselves be cared for when ill.

Relatives.—Another Red Cross service carried out in collaboration with the army enabled relatives of dangerously wounded men to visit them. Whenever it was thought by the hospital authorities that a patient was likely to benefit by such a visit, the relatives received a wire from the War Office, on receipt of which they were able to travel free of charge to London, where they were taken over by the Red Cross, furnished with a guide and flown to Brussels. Here again they were taken charge of by a special Red Cross service and rushed to the hospital where their relative lay. During their stay they were housed in Hostels established for this sole purpose, of which eventually there were four—two in Belgium at Brussels and Ostend, and two in Germany at Hamburg and Vlotho. It is surprising how many cases which had been regarded as hopeless " turned

the corner " and recovered as a direct result of a visit from a wife or mother.

Canteen.—In conjunction with the Ostend Hostel, a Canteen was opened at the Dockside Railway Station in a large hall that had formerly been the station buffet. Here the wounded lay on their stretchers, reading, smoking and listening to the gramophone whilst waiting to be taken on board the hospital-carrier. From the opening day in November, 1944 to the end of August, 1945, over 18,000 casualties had passed through this canteen.

Prisoners of War.—The release of British prisoners of war in Germany furnished a dramatic episode in the life of this Commission. Within a couple of days the trickle of released men passing through Brussels had swollen to a river in spate. They began to arrive in their thousands by train, by road and by air. Teams of welfare officers and women secretaries were hurriedly organized and put in charge of stalls that were set up in barracks, airfields and in our own headquarters, laden with Red Cross comforts ranging from combs to towels, and razor-blades to pyjamas, not forgetting rope-soled slippers for the footsore. The released men, as they filed past the stalls, were handed the articles of kit that they were lacking, with a packet of cigarettes and a bar of chocolate for good measure. To replace these issues, twenty and more Dakota planes were arriving daily from the U.K. loaded with Red Cross comforts, and sixty-five additional tons arrived by the sea route. These activities extended far beyond the Brussels area to care for released men in forward transit camps. In all some 73,000 released men passed through Brussels, few of whom missed paying a call at the Red Cross depots.

I should like now to quote some interesting figures about this side of the work.

SERVICES RENDERED .. .. 11*th July*, 1944 *to* 30*th April*, 1946.

Motor ambulance Convoys—Three :

Ambulances	111
Miles covered	1,406,800
Patients carried	166,195
Women drivers	166

Convalescent Homes—Four :

Patients received—male and female, all ranks	1,960

Welfare Officers attached to Military Hospitals (peak)	106
Stores Personnel (peak)	55

Stores :

Value of stores issued to Military Hospitals, Allied Red Crosses, etc.	£500,000 approx.

Motor Transport :

Lorries and vans	137
Miles covered	1,040,000

Released Prisoners of War :

Provided with comforts by Brussels H.Q. office	73,000

Brussels. *8th May*, 1946.

Total Red Cross and St. John personnel now in the Commission	about 65

(*i.e.* when all Brussels H.Q., etc., are finally closed down).

FOREIGN RELATIONS SECTION.

The work of the Foreign Relations Section is closely integrated with every other part of the Commission. Not only is it engaged in searching for missing people in hospitals, devastated areas and transit camps, but it is trying to trace and bring together families that have been separated by years of war. It also helps with the work connected with the care of British subjects in liberated countries and in Germany. It successfully helps to form friendly relationships with our sister Red Cross Organizations of America, Belgium, Denmark, France, Holland, Sweden, Switzerland, Iceland, Poland, etc., and also keeps in close liaison with the International Red Cross in Geneva. Its work is of the utmost value to the Commissioner and Deputy Commissioners in every branch of the civilian relief work that they have to carry out.

CIVILIAN RELIEF UNIT.

France.—Early in 1945 a scheme was started for issuing food parcels and clothes to British-born citizens in France, but it was not until September that a comprehensive plan covering the whole of France was inaugurated.

The scheme is directed and the actual relief for the Paris Area conducted from the headquarters at 1, Avenue de Marigny, Paris. This area contains the largest number of British citizens. It is estimated that some 6,000 are now in receipt of relief in the inner and outer areas of Paris : the inner comprised the city itself and its suburbs ; the outer, the huge area surrounding the Seine Department. The figures for the issues made in the last quarter of 1945 were:

	Inner Zone	Outer Zone
Food parcels	30,544	4,439
Clothing parcels	4,038	318
Blankets	4,467	976

The remainder of France is divided into eight areas, corresponding in nearly all cases to the British Consulate Areas. Some of these areas are enormous; the Bordeaux area, for example, comprises sixteen Departments. The centres from which the teams work are: Bordeaux, Dinard, Lille, Lyon, Marseilles, Nice, Rouen, and Strasbourg.

The main stores of parcels are at Marseilles, Paris, and Bordeaux, with a reserve supply at Antwerp. From these stores each area is supplied by heavy lorries, and dumps are made in various places as required for the particular area. The actual distribution is made by women Welfare Drivers from Britain, Canada and South Africa. The teams vary in size from eight to two according to the size of the area and the number of British citizens in it. They work in close touch with the consuls, in consultation with whom everything is done. Without the help which the consuls give practically nothing could be done.

The Teams often are out for several weeks on end, and during these periods rely for help on the French civil and military authorities: that help is given them fully, and they are always accorded a most friendly welcome by personnel of those authorities. They find the French civilians just the same, a kindly greeting and an ever-ready help. Helped by consuls, the Red Cross has tried to *find* Britons who need its help. Information that hard-pressed people are living in some isolated spot is followed up, a visit made, and then welfare drivers call with parcels.

Everywhere they go these welfare workers make contact with the French Red Cross, other charitable organizations, the French authorities of all kinds, and the French people. Always they receive from these various people a friendliness that is a grand token of the friendship that the French feel for the British, and which the average Briton desires so much to reciprocate. All this makes a very real contribution to that true friendship between our two countries which is so essential to the well-being of Western Europe.

The Relief Organization made its last issues by March 31st, giving out enough then to cover everyone up to April 30th. In addition, each consul was left with a supply of parcels according to his requirements, so that he could continue to deal with specially needy cases after the general scheme was finished. In this they will be helped by about forty B.R.C. members who will remain with them throughout this next autumn and winter.

By April it was calculated that some 170,000 parcels had been issued throughout France. That means nearly 3,000,000 articles of food distributed in six lean months—meats, butter, margarine, rice, flour, cheese, jam, tea, sugar and chocolate. In addition to all this, in co-operation with the French Red Cross, French Salvation Army, and *Sécours Quaker*, about 150,000 food parcels have been issued to

French children suffering from malnutrition, and a considerable quantity of clothing, etc., to French of all kinds in hospitals and convalescent homes. It is hoped to continue this for several months to come.

Finally, at the end of April, as a result of a report on conditions of child welfare in St. Nazaire, in co-operation with the French and Swiss Red Cross, 500 food parcels, a selection of baby-linen and children's clothing and odd supplementary items such as soap and cod-liver-oil, were taken down by road from Paris and distributed amongst twenty schools in St. Nazaire.

Belgium, Holland and Germany.—I come now to the part of Civilian Relief with which I have been intimately connected as Deputy Commissioner for the past sixteen months. Before I describe in detail the work we have done I should say a few words about the organization of this particular unit.

In the early days of the war there was set up the Council of British Societies for Relief Abroad. This Council, C.B.S.R.A. as it came to be known, included, as well as the British Red Cross Society and Society of St. John of Jerusalem, nine other voluntary societies, *viz.*, Friends' Ambulance Unit, Friends' Relief Service, Scouts, Guides, Salvation Army, Catholic Committee for Relief Abroad, Jewish Committee for Relief Abroad, Save the Children Fund, and International Voluntary Service for Peace. Since the army wished to deal with only one organization, all these voluntary societies agreed to serve under the British Red Cross "umbrella."

France and Belgium.—In September, 1944, three Relief Sections, two from F.A.U. and one from Scouts, and one B.R.C. Hospital Section, landed in Normandy and started work helping and caring for the civilian population in the devastated areas. I should mention here that each Relief Section consisted at first of twelve men, and later of twelve men or women; and each Hospital Section of twenty-four members all told, of whom two were medical officers, four nurses, eight nursing assistants and the remainder quartermaster, orderlies, drivers, etc. From the very start the hospital sections were composed of both men and women.

This small force did extremely good work in those early days and earned high praise from the military authorities. The Commander of the Second Army said later: "If I had known their work at the time, I should have asked for more and landed them earlier." As the armies advanced they were followed up by this small body of men and women, and when I arrived at Brussels on New Year's Eve, 1944, I found them distributed in Belgium and Holland.

Soon after my arrival five more relief sections landed at Ostend and went straight to Antwerp to help the Belgian Civil Defence workers. Antwerp at that time had become the target of all the V.1's and V.2's that the Germans could bring to bear on it. In

February six more relief sections, two hospital sections, and two laboratory sections landed at Ostend and sixteen bath and ten laundry sections, the gift of Lever Bros., arrived at Boulogne. All these sections moved up to places in Belgium and South Holland where they were most needed, caring for the civilians who by now were beginning to stream back from the battle areas as the armies fought their way into Germany.

In April, I moved my H.Q. from Brussels to Tilburg, to be ready to move into North Holland as soon as it was liberated. Then on 15th April, Belsen Concentration Camp was uncovered by the army, and in response to an urgent call from the medical authorities for assistance there we despatched six relief sections from the Antwerp area to that place of horror.

They arrived there on 21st April and at once started to help, the male members of the sections going into Horror Camp No. 1 and assisting the army to evacuate those who could be moved, and the women members improvising and supervising emergency hospitals for those who were brought out suffering from starvation, typhus, dysentery, etc.; and dying, in the hospitals alone, at the rate of thirty or forty a night. The work of our women under the most appalling conditions is an epic which should never be forgotten in the annals of the British Red Cross. Of the six sections that went there, five were B.R.C. and St. John and one F.R.S.

About that time it became apparent that U.N.R.R.A., whose responsibility it was to look after the Displaced Persons (amounting to about 1,700,000 persons in the British Zone), would not have enough teams in the field to compete with their task and at the urgent request of Civil Affairs of the Army, twelve more relief sections and four more hospital sections were asked for and in due course arrived. Early in May we started moving into North Holland, and when the Germans capitulated we at once sent relief sections into the big cities of Utrecht, Rotterdam, Amsterdam and The Hague to help the starving Dutch and to assist the Netherlands Red Cross and the Dutch doctors, nurses and welfare workers in their task of rehabilitation and resettlement.

A double hospital section was set up in South Rotterdam in the dock area and looked after 250 patients suffering from typhoid. Another hospital section provided by the Guides was opened to compete with another typhoid epidemic in Gorinchem, and others went to Delft (S.C.F.) and Maastricht (C.C.R.A.). My H.Q. went to Utrecht and eventually to The Hague.

Germany.—Meanwhile the remainder of the Relief Sections, namely the original eight (all male) and No. 1 B.R.C. Hospital Section, were following up the victorious armies and starting their work with the displaced persons in Germany; sorting them out, assembling them in camps, nursing the sick and generally helping the army and

U.N.R.R.A. in the terrific task of looking after one-and-a-half million ex-slave labourers and concentration-camp victims suddenly released from German domination.

We finished our work in North Holland at the end of June and with the exception of the three hospital sections still competing with typhoid and the bath and laundry sections, which were handed over to the Dutch Red Cross, we all assembled in Germany, my H.Q. being at Vlotho in Westphalia province. Welfare work in the Displaced Persons Assembly Centres continued until the end of 1945, by which time more than half the displaced persons had been repatriated and U.N.R.R.A. had produced a considerable number of teams. This enabled us to agree to the suggestion of the Army and Control Commission in Germany that some of our Relief Sections should be withdrawn from the Displaced Persons' Assembly Centres and go to the assistance of the German Welfare Societies and Red Cross. The former had, to a certain extent, survived the Nazi régime and were able to start helping Germans in need of assistance. The German Red Cross, however, under Hitler, had become completely Nazified and it was some months after the capitulation before it was allowed to start again.

Our work for the Germans consists in helping these welfare societies in a large number of ways. Some of these activities are :

1. Supplementary feeding of children between the ages of three and twelve in the Ruhr, Hamburg and other cities. In this we are assisted by the International and Swedish Red Crosses, working under our supervision.

2. Evacuation of childen from Berlin to the country for the winter 1945-46.

3. Evacuation of orphan children from Berlin to foster-parents in Westphalia.

4. Help to German Red Cross in looking after refugees from the Russian zone and Czechoslovakia.

5. Similar help to German Red Cross in meeting the 1½ million persons expelled from Poland, arranging transit camps and detraining and entraining stations.

6. Encouraging the Germans to form Youth Clubs, Discussion Groups, and generally trying to show them the British democratic way of life.

7. Welfare work with ex-concentration-camp victims and inspecting local German prisons.

8. Assisting the German welfare societies in starting and running summer camps for the children in the bombed-out cities.

I will now give you some figures to show the number of sections and personnel engaged in this Civilian Relief. When I started work in Brussels on 1st January, 1945, we had three Relief Sections and

one Hospital Section in the field, a total of sixty personnel. Just before we left Holland in June, 1945, there were working there and in Germany seven Hospital Sections, thirty-six Relief Sections, two Laboratory Sections, sixteen Bath Sections, ten Laundry Sections, three Canteen Sections, two Kitchen Sections, and three Information Sections, which together with my own H.Q. amounted to nearly 1,000 personnel.

As I have already told you, we left behind in Holland the Bath and Laundry Sections, but as the work in Germany developed, an appeal for twenty-four more relief sections was made by the army and these have all now gone overseas.

When I left Germany three weeks ago, two of the seven Hospital Sections, two Laboratory Sections and three Information Sections had been disbanded, as they were no longer required, and the final totals on that date, May 5th, were :

	Teams.	*Personnel.*
GERMAN WELFARE WORK.		
Relief Sections	30*	321
Kitchen/Canteen Sections	2	15
Transport Sections	1	9
WORK IN DISPLACED PERSONS' CAMPS.		
Hospital Sections	5	124
Relief Sections	26*	253
HEADQUARTERS.		
H.Q. Staff, Liaison Officers, etc.	—	53
Rest House Staff	—	3
Nutrition Unit	—	4
SWEDISH RED CROSS TEAM.		
Relief Sections	6	112
Transport Sections	1	
H.Q. Staff	—	
INTERNATIONAL RED CROSS.		
Relief Sections	7†	†30
Total		924

That is a very brief description of the work of the past two years under General Lindsay in the North-West Europe Commission.

* Two Relief Sections working partly on Displaced Persons, partly on German Welfare Work.

† (These are approximate figures only).

That is the material side of it. What of the humanity side? What a vast amount of misery, hunger, discontent and fear it represents! Think of the French at Caen and its neighbourhood in the early days, think of the starving Dutch in North Holland, of the millions of displaced persons released from places like Belsen and Sandbostel, of those Jews, Balts, Poles and Yugo-Slavs who have no home to return to or who dare not return to their homes through fear. Finally, picture the defeated Germans themselves, suffering hunger, expulsion from their homes, and the general frustration due to the calamity of defeat which they brought on themselves.

Our reward has been gratitude shown in hundreds of different ways. I will give you some examples. A man in the canteen on Folkestone railway-station who insisted on buying me a cup of tea and a bun because he saw my Red Cross uniform and told me that as a prisoner of war in Germany he would have starved to death if he had not received Red Cross food parcels. We have seen the overwhelming joy of those whom our Foreign Relations Department have been able to join together after years of separation. The Poles in the camps beseech our welfare workers to go back to Poland with them and help to look after them in the new life they are going to take up in the greatly changed country they are returning to. The Germans themselves are deeply grateful for the way we are trying to give them a new way of life and new hope for the future.

Finally, may I say this? During the past sixteen months I have worked with men and women of all ages, of varying political ideals, of different religious beliefs and different upbringings, and we have all worked in perfect harmony; and the reason for that harmony was that we were working for humanity, in response to those words spoken nearly 2,000 years ago: "Go, and do thou likewise." No matter who he is, why he is suffering, whose fault it is, he is "my neighbour" and it is my duty to go and help. And it is the duty of the Red Cross, which is the only one of our societies that has a Government Charter in most countries, to take the lead amongst all the other voluntary societies in this work, which is absolutely essential to the future of the world.

We, in our small way, have been working amongst people of almost every European country, and are surely doing something towards building up an understanding between ourselves and at the same time helping them to understand each other. This can become a great force for spiritual good that might do a great deal to bring peace and goodwill amongst those with whom we are working. If we can do this, then they may carry something of the true British spirit of tolerance, kindness and good-humour back with them to their respective countries, and thus help to restore peace and goodwill to this war-stricken world.

Reviews of Books

Industrial Toxicology. By DONALD HUNTER, M.D., F.R.C.P. Pp. 80. London: Oxford University Press (Humphrey Milford).—Dr. Hunter's "Croonian Lectures" for 1942, which have already been published in the *Quarterly Journal of Medicine*, now appear in very handsome book form. These lectures give a detailed review, with full bibliography, of the effects of toxic substances encountered in industry. The information is of the greatest importance to industrial medical officers as well as to certifying surgeons and medical referees under the Workmen's Compensation Acts. Every practitioner will be glad to know where to turn to in cases of doubtful industrial diseases, from which his patients may be or may claim to be suffering. This is a work of great authority.

Applied Physiology. By SAMSON WRIGHT, M.D., F.R.C.P. Eighth Edition. Pp. xxx., 944. Illustrated. London: Oxford University Press. 1945. Price 30s. net.—In the twenty years which have elapsed since its first appearance, "Samson Wright" has earned an established place among the standard textbooks. Of great value to the pre-clinical and clinical student, and well-nigh indispensable to the post-graduate it has, alas, increased in size with its years. With this edition it has added 150 pages to its stature together with a considerable number of new illustrations. The author has been concerned lest many of his readers pay too little attention to the illustrations. In an attempt to remedy this an appendix on the critical analysis of figures has been added. The student who studies this carefully will not only gain much when reading this book, but whenever confronted with similar figures or tracings. Needless to say, the work has been brought completely up to date by the addition of new sections and the rewriting of many more. As an illustration of the thoroughness with which this has been done may be cited the photograph illustrating *urticaria factitia*, which consists of the picture of a member of the British Merchant Navy across whose broad back are whealed the words "There'll always be an England."

Class-Book of Practical Embryology. By P. N. B. Odgers. Pp. 63. Illustrated. London: Oxford University Press. 1945. 7s. 6d. net.—This is a small but very useful class-book of practical embryology. It is based upon 12 transverse sections through a 6 mm. pig embryo, and 13 through a 10 mm. pig embryo. Representative sections are clearly drawn, and briefly described. Some simple orienting diagrams are also included. Within the limits of what it sets out to achieve, this manual of practical embryology for medical students is excellent, and can be thoroughly recommended.

ABC of Medical Treatment. By E. NOBLE CHAMBERLAIN, M.D., M.Sc., F.R.C.P. Pp. viii., 206. London: Oxford University Press. 1946. Price 10s. 6d. net.—In this handy little book the subject matter has been arranged alphabetically, and indicates briefly and succintly the main lines of treatment available for any given disease. There is a

short appendix on the use of Penicillin and its indications. It is a pity that in some places the instruction given lacks precision as, for instance, the recommendations that pneumococcal arthritis should be treated by "sulphonamides" and hæmophilia by "snake venom." It is clearly important that a suitable sulphonamide should be used and the right sort of snake venom. However, intended as it is for the general practitioner wishing to obtain ready reference to the essentials of treatment, it should prove of great help. By no means the least valuable part is a chapter by Miss Simmonds on Diets. This includes detailed diet sheets suitable for a large variety of conditions and these are, in most cases, presented as "war-time" and "post-war" alternatives.

Textbook of the Practice of Medicine. Edited by F. W. PRICE, M.D., C.M., F.R.C.P., F.R.S. Seventh Edition. Pp. xlvi., 2034. Illustrated. London: Oxford University Press (Geoffrey Cumberlege). 1946. Price 42s. net.—In the preface to the first edition of this work which appeared in 1922, the editor expressed the hope "that the book may be considered a credit to the London School of Medicine." The rapid succession of impressions and new editions leaves little room for doubt that this hope has been fully realized. Covering as it does the whole field of medicine and written by a most distinguished band of contributors, Price's *Medicine* may well claim to present British Medicine to the world. In this edition many sections have been re-written and new sections added, so that the many contributions which the war years have made to medicine have all been included. It can be recommended confidently to all senior students as a textbook, and to practitioners as an invaluable book of reference.

Medical Aspects of Growing Old. By A. T. TODD, M.B., M.R.C.P. Pp. vi., 164. Illustrated. Bristol: John Wright & Sons Ltd. 1946. Price 15s. net.—It has been said that it is "a social duty gracefully to grow old," so that there will be many who will welcome the practical suggestions that Dr. Todd has made in this book. He says that he has written it in an "attempt to lessen the dependance of the elderly person, and help him to become useful and happy, and also to defer the onset of old age if a start is made in middle age." Accordingly, it is phrased so that the layman can read it. The scheme is the consideration of the whole metabolic processes—but this has involved the inclusion of original ideas presented without much evidence for their acceptance. Thus it needs to be perused with discrimination. For instance, it is stated that fats are of no metabolic value in the dietary, though partly beneficial as appetizers. Milk and cheese are eschewed, but butter is permissible. It is difficult to appraise a volume with a dual purpose and the lay reader may find it difficult to comprehend some unusual views on circulating and respiratory disturbances. Perhaps the most useful section is that on retirement, although those on the care of the skin, scalp and feet are helpful. The prostatic enlargement and chronic vulvitis are discussed in detail. On the whole, the book is stimulating and suggestive. The mental attitude to old age might with advantage have been considered for, after all, so long as one remains "young in

thought," the years pass unnoticed. There are some useful tables on food values and vitamins, but the index is far from comprehensive.

A Synopsis of Forensic Medicine and Toxicology. By E. W. CARYL THOMAS, M.D., B.Sc., D.P.H., Barrister-at-Law. Second Edition. Pp. 179. Bristol: John Wright & Sons Ltd. 1945. Price 10s. net.—It is generally conceded that it is not necessary for a medical practitioner to acquire an expert knowledge of forensic medicine, but that it is essential to be able to deal promptly with forensic problems which may occur in everyday practice. These include the signing of numerous statutory certificates, the giving of evidence in Courts of Law, the methods of dealing with mentally disordered persons, and a considerable number of other similar duties. These are dealt with in a most admirable way by Dr. Caryl Thomas in his *Synopsis of Forensic Medicine and Toxicology*, which has been compiled with great care and accuracy. It is gratifying to notice that the author has treated the Matrimonial Causes Act, 1937, in some detail, since at the present time medical evidence is more frequently called for in the Divorce Court than in normal years. The subject of Toxicology has been dealt with in sufficient detail for students to gain some knowledge of the elementary principles involved in toxicological examinations.

The Psycho-Pathology of Prostitution. By EDWARD GLOVER, M.D. Pp. 16. London: Institute for the Scientific Treatment of Delinquency. 1945. Price 1s.—This short pamphlet, 16 pages, is an exposition of factors supposedly responsible for prostitution considered from the psycho-analytic viewpoint. It does not claim to provide answers to the practical problems, nor can it be expected to supply useful data. The theoretical reasoning, as far as it goes, is sound, but is biased by the narrow view point. Many people would lay more stress on the backwardness of the prostitute than does the author. To psycho-analysts the paper is an interesting essay, but the approach is neither instructive nor useful to others.

Neurosis and the Mental Health Services. By C. P. BLACKER, M.D., F.R.C.P. Pp. xxii., 218. London: Oxford University Press (Geoffrey Cumberlege). 1946. Price 21s. net.—This comprehensive and detailed report is based on the facts found by the Regional Surveys of 1942–43. Full statistics regarding number of clinics, type of accommodation, patients seen and work done at the various centres, are given. The question as to whether neurosis is on the increase is discussed. The second and third parts deal with long-term and short-term policy respectively. The latter is primarily one of training an adequate number of psychiatrists, psychologists and psychiatric social workers. Bristol is envisaged as being one of the leading post-graduate training centres outside London. Long-term policy involves a big increase in the psychiatric services and the requirements of a population of a million people are discussed in detail. A hundred beds outside the present Mental Hospitals will be required. In university centres these beds would be part of the Teaching Psychiatric Unit which should if possible be adjacent to and form part of the main teaching hospital. A considerable expansion of out-patient work will be needed. Six new

patients or four new patients and four treatment cases are regarded as the maximum for a single session. Work with children is given first priority, and an area with a population of a million would require ten Child Guidance Centres and three Clinics, also a Hostel for fifty unstable or difficult children. This report is an outstanding piece of work, and Sir William Jameson's comment in the introduction that " the reactions it evokes will be taken into account when framing future policy " should not be overlooked.

Outlines of Physical Methods in Medicine. By G. D. KERSLEY, M.D., F.R.C.P. Pp. ix., 85. Illustrated. London: William Heinemann Medical Books Ltd. 1945. Price 6s. net.—Dr. Kersley, in his preface, says that this little book was produced from notes for lectures to medical officers undergoing training in Physical Medicine, and to R.A.M.C. masseurs. It is quite impossible to condense the whole of physical medicine into eighty pages, especially when a chapter on X-rays is included! Medical students, who want to get a preliminary idea of what Physical Medicine is all about, will find this book useful. There is an extraordinary diagram of the faradic coil on plate 3. The book is well printed and reasonably priced.

Cellona Technique: a handbook to the Functional Treatment of Fractures, with section on Methods of Plaster Fixation in Tuberculous Disease of the Spine and Hip Joints. Sixth Edition. Pp. 105. Illustrated. Hull: T. J. Smith & Nephew Ltd. 1945.—This useful little volume has been enlarged by 50 per cent. and completely revised, and is a great credit to its producers, Messrs. T. J. Smith & Nephew. As always, it shows the hand of the orthopædic specialists throughout its pages. Essentially practical in every section and in all the numerous illustrations, it is a very useful book for all members of the Medical and Nursing professions and also for plaster orderlies. There is little one can criticize in the way it handles the scope of plaster technique and the advantages of Cellona bandage. The illustrations of the scaphoid plaster with the adducted and unopposed thumb is, however, a frequent error. The thumb should be opposed and adducted, thus improving the fixation and vastly enhancing the performance of the hand. The " Tobruk " Plaster, demonstrated on page 66, was superseded later in the war by a later model involving less risks and more adapted to inspection of the limb. The quality of paper and production has not suffered, although this was a wartime production. It is certainly a book which should be studied by all who work within the ever-growing scope of plaster of paris.

Cookery Book for Diabetics. By The Diabetic Association. Pp. 82. London: H. K. Lewis & Co. Ltd. 1945. Price 4s.—This book almost makes one feel that a diabetic in the home might be a help if it led to the use of the recipes here set forth. It really is an excellent production, and Professor Mottram's words of introduction seem the most appropriate way of summing up one's own feelings. The hints for diabetic cookery are particularly attractive, they throw out so much in the way of challenge and common sense.

Editorial Note

Sir Philip Robert Morris.

THE Bristol Medico-Chirurgical Society extends a warm welcome to the new Vice-Chancellor of the University, Sir Philip Robert Morris, C.B.E., M.A., who has been since 1944 Director-General of Army Education. He was born at Hildenborough, Kent, and educated at Tonbridge and Trinity College, Oxford. After teaching history and classics at Westminster Training College, he became Administrative Officer, Assistant Director, and eventually Director of Kent County Education Authority. He was awarded the C.B.E. in 1941, and was knighted in June, 1946. To a man of his energy and administrative ability it is probably a matter for congratulation rather than commiseration that he enters upon his responsible office in Bristol at a time when so much of the precious metal is fluid in the crucible, and ready to be poured out into fresh moulds, shaped according to the mind of the craftsmen. In no department of University Education is this more true than in the Faculty of Medicine. Probably no other Faculty will make such demands on his time and attention. The school has to be expanded to admit many more medical and dental students to meet the growing needs of the country. Fresh buildings and fresh staff are required. New professors and heads of departments have been, or will soon be, appointed. The medical curriculum is being modified. Some subjects, notably pædiatrics and psychiatry, are in need of development. Diplomas in public health, radiology and other subjects are under consideration. There are urgent problems of collaboration to be worked out between the voluntary hospitals, the public health authorities and the university. The university is now entrusted with the responsibility of giving advice to hospital governors all over the south-west of England when new members of staff are to be appointed. Postgraduate medical education is more necessary than ever now that so many doctors are being demobilized. These are only some of the problems that have to be tackled, and Sir Philip Morris has already shown an active and welcome interest in them. It is a great task that he has undertaken, but the possibilities for good are vast and far-reaching. He has our most sympathetic support.

Meetings of Societies

Bristol Medico-Chirurgical Society

MEETINGS OF THE PRESENT SESSION, 1945–46.

THE first meeting of the season was held in October, when Dr. H. H. Carleton, D.M., F.R.C.P., gave his Presidential Address entitled **"Nature and Science,"** which was received with great interest.

At this Meeting the Officers for the succeeding year were elected.

President, Dr. H. H. Carleton.
President-elect, Mr. Hubert Chitty.
Hon. Secretary, Mr. A. L. Eyre-Brook.
Hon Treasurer, Dr. G. E. F. Sutton.

Honorary Medical Librarians. It was decided to ask the Professors of Medicine, Surgery, Gynæcology and Midwifery and Pathology to act as Honorary Medical Librarians.

The Second Meeting was held in November, when Mr. Norman Tanner, F.R.C.S., opened a discussion on the **"Management of Chronic Gastric and Duodenal Ulcer."** This paper was extremely well received and stimulated a very interesting and prolonged discussion on this difficult problem.

The following were elected to the Committee: Dr. S. Bryan Adams, Dr. R. F. Barbour, Dr. Frank Bodman, Dr. Charles Corfield, Dr. Beryl Corner, Dr. G. L. Ormerod, Professor T. Hewer, Dr. G. D. Kersley, Dr. K. Soltau.

A Clinical Meeting followed in January at the Bristol Royal Infirmary, Out-Patients' Department. About eighty cases of interest were demonstrated, and the success of the evening was in no small part due to the excellent refreshments provided by the Matron and Nursing Staff, and the practical assistance in all the arrangements provided by Mr. Hill and his staff.

The Fourth Meeting was held in February, when two papers on **"The Diagnosis of Tumours of the Central Nervous System,"** were given by Miss Diana Kinlock Beck, F.R.C.S., and Professor Hugh Cairns, F.R.C.S., the latter illustrating his paper with an excellent series of slides.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.

INCOME AND EXPENDITURE ACCOUNT for the seven years ended 30th September, 1945.

EXPENDITURE.	£	s.	d.	£	s.	d.
Grants to *The Bristol Medico-Chirurgical Journal*				760	0	0
Grants to Medical War Relief Fund				348	10	0
Librarian—Honorariam				105	0	0
Miscellaneous Expenses—						
Catering	30	18	2			
Postages and Sundries	61	0	8			
Printing and Stationery	29	8	10			
Audit Fee (7 years) ..	14	14	0			
Lantern and Cinematograph at Meetings ..	2	6	0			
Lewis's Medical and Scientific Library—Subscription and Postages	45	4	3			
				183	11	11
				1,397	1	11
Surplus for the 7 years				46	18	5
				£1,444	0	4

INCOME.	£	s.	d.
Members' Subscriptions	1,354	12	6
Interest on Bank Deposits	13	2	10
Interest on £500 4 per cent. Consolidated Stock, less tax	76	5	0
	£1,444	0	4

BALANCE SHEET as at 30th September, 1945.

LIABILITIES AND CAPITAL.	£	s.	d.	£	s.	d.
Sundry Creditors				14	14	0
Capital as at 30th Sept., 1938	1,134	6	9			
Add Surplus for the 7 years	46	18	5			
				1,181	5	2
				£1,195	19	2

ASSETS.	£	s.	d.	£	s.	d.
Cash at Bank—						
Current Account	569	2	10			
Deposit Account	189	7	4			
				758	10	2
£500 4 per cent. Consolidated Stock at cost				437	9	0
				£1,195	19	2

Audited and found correct,
H. E. KEELER,
Chartered Accountant,
Auditor.

16–18 CLARE STREET, BRISTOL 1.
14th May, 1946.

The retiring Secretary, Mr. R. V. Cooke, F.R.C.S., was unable to attend the Fourth Meeting because of illness. The President expressed on behalf of the Society their profound thanks to Mr. Cooke for his untiring service over a great number of years.

The Fifth Meeting took place in March, when Dr. G. D. Kersley, F.R.C.P., gave a stimulating address on **"The Diagnosis and Treatment of Rheumatoid Arthritis,"** which was followed by a discussion in which many took part.

So far thirty-four new members have been elected, and it has been decided that temporary Honorary Membership is automatically conferred on all ex-members of the Forces while they are engaged on post-graduate work in Bristol.

The sum of £250 has been voted by the Society to the Medical War Relief Fund.

The Medical Library of the University of Bristol

WITH WHICH IS INCORPORATED

The Library of the Bristol Medico-Chirurgical Society

The following donations have been received since the publication of the list in the last issue.

Brompton Hospital (1)	1 Volume.
Carlson, Capt. (2)	4 Volumes.
General Medical Council (3)	1 Volume.
Dr. H. B. Howell (4)	1 Volume.
Lefanu, W. R., Esq. (5)	1 Volume.
H. K. Lewis & Co., Ltd. (6)	1 Volume.
Michell Clarke Memorial Fund (7)	51 Volumes.
Royal College of Surgeons (8)	1 Volume.
Surgeon General's Library (9)	4 Volumes.
Trade Delegation of U.S.S.R. (10)	1 Volume.
Watson-Williams, E. (11)	1 Volume.
Wilmer Opthalmological Inst. (12)	1 Volume.

Unbound periodicals have also been received from Professor C. Bruce Perry, J. C. Shipham, Esq. and Messrs. John Wright and Sons, Ltd.

THE ONE HUNDRED AND EIGHTIETH LIST OF BOOKS.

The figures in round brackets refer to the figures after the names of the donors. The books to which no such figures have been attached have either been bought from the Library Fund or received through the *Journal*.

Appleton, J. L. T. .. *Bacterial Infections* .. .. 3rd Ed. (7) 1944
Beaumont, G. E. .. .. *Medicine* .. .. 4th Ed. (7) 1945
Behan, R. J. .. .. .. *Pain* .. .. (2) 1915
Blacker, C. P. .. .. *Neurosis and the Mental Health Services* 1946
Blair, V. P., and Ivy, R. H. *Essentials of Oral Surgery* .. 3rd Ed. (7) 1944
Bois-Raymond, R. .. *Physiologie des Menschen und du Säugethiere* (2) 1908
Bourne, A. W., and Williams, L. H. *Recent Advances in Obstetrics and Gynæcology* .. .. 6th Ed. 1945
Boyd, W. .. .. .. *Pathology of Internal Diseases* .. 4th Ed. (7) 1944
Boyd, W. .. .. .. *Surgical Pathology* .. .. 5th Ed. (7) 1945
Brailsford, J. F. .. .. *Radiology of Bones and Joints* .. 3rd Ed. (7) 1944
British Pharmaceutical Codex, 1934 .. .. .. 7th Supplement (7) 1945
Cameron, A. T. .. .. *Recent Advances in Endocrinology* 5th Ed. (7) 1945
Chamberlain, E. Noble.. *A.B.C. of Medical Treatment* 1946
Chesterman, J. T. .. *Acute Intestinal Obstruction* .. .. (7) 1945
Clark, W. E. le G. .. *Tissues of the Body* .. .. .. 2nd Ed. (7) 1945
Cookery Book for Diabetics (Diabetic Association) 1945
Fifield, L. R. .. .. *Infections of the Hand* .. .. 2nd Ed. 1939
Foote, R. R. .. .. .. *Varicose Veins, Hœmorhoids and other Conditions* .. .. (7) 1944
Fox, Edw. Long. .. .. *Cerebral Localisation* (M.S.) .. .. (11)
French, H. .. .. .. *Index of Differential Diagnosis* .. .. 6th Ed. 1945
Gabriel, W. B. .. .. *Principles and Practice of Rectal Surgery* 3rd Ed. (7) 1945
Geschickter, C. F. .. *Diseases of the Breast* .. .. .. 2nd Ed. (7) 1943
Gillespie, N. A. .. .. *Endotracheal Anœsthesia* .. .. (7) 1941
Groves, E. W. Hey .. *Synopsis of Surgery* .. .. .. 12th Ed. 1945
Hewer, C. L. .. .. .. *Recent Advances in Anœsthesia and Analgesia* 5th Ed. (7) 1946
Howell, H. B. .. .. *Medicine in Canada* (*Clio Medica*) .. .. (4) 1933
Human, J. U. .. .. *Blind Intubation and the Signs of Anœsthesia* 2nd Ed. (7) 1941
Hunter, D. .. .. .. *Industrial Toxicology* 1944
Hutchison, Sir R. .. *Elements of Medical Treatment* .. .. 4th Ed. 1945
Hutchison, Sir R. .. *Lectures on Dis. of Children* .. .. 9th Ed. (7) 1945
Illingworth, C. F. W. .. *Short Text-book of Surgery* .. .. 3rd Ed. (7) 1943
Index Catalogue of the Surgeon General's Library, 4th Series, Vols. 6–9 (9) 1941–45
Jordan, E. O., and Burrows, W. *Text-book of Bacteriology* ..14th Ed. (7) 1945
Kersley, G. D. .. .. *Outlines of Physical Methods in Medicine* 1945
Kettle, E. H. .. .. *Pathology of Tumours*, 3rd Ed. by W. G. Barnard and A. H. T. Robb-Smith .. .. .. (7) 1945

Le Fanu, W. R. .. .. *John Hunter—A List of his Books* .. .. (5) 1946
Lettsom, J. C. .. .. *History of Some of the Effects of Hard Drinking* 1791
Lewis's : 1844–1944 .. .. (6) 1945
Lewis, Sir T. .. .. *Exercises in Human Physiology* .. .. .. (7) 1946
Love, R. J. M. .. .. *Minor Surgery* .. .. 2nd Ed. (7) 1945
McClance, R. A., and Widdowson, E. M. *Chemical Composition of Foods* 6th Ed. 1946
Mackie, T. J., and McCarling, J. E. *Handbook of Practical Bacteriology* 7th Ed. (7) 1943
McLachlan, A. E. W. .. *Handbook of the Diagnosis and Treatment of Venereal Diseases* .. .. .. 2nd Ed. (7) 1945
Maxwell, J. .. .. .. *Introduction to Diseases of the Chest* .. 2nd Ed. 1945
Meakins, J. C. .. .. *Practice of Medicine* .. .. .. 4th Ed. (7) 1944
Mennell, J. B. .. .. *Physical Treatment by Movement and Massage* 5th Ed. (7) 1945
Microbiology and Epidemiology, by various authors .. .. (10) 1945
Minnitt, R. J. .. .. *Gas and Air Analgesia* .. .. .. 2nd Ed. (7) 1944
Morley, M. E. .. .. *Cleft Palate and Speech* .. .. (7) 1945
Myrdal, A. .. .. .. *Nation and Family* .. .. (7) 1945
New and Non-Official Remedies .. .. (7) 1945
Odgers, P. N. B. .. .. *Class-Book of Practical Embryology* 1945
Orban, B. .. .. .. *Oral Histology and Embryology* .. .. .. (7) 1944
Panton, P. N., and Marrack, J. R. *Clinical Pathology* .. .. 5th Ed. (7) 1945
Parsons, Sir J. H. .. *Diseases of the Eye* .. .. .. 10th Ed. (7) 1944
Paterson, D. .. .. *Sick Children* .. .. 5th Ed. (7) 1944
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